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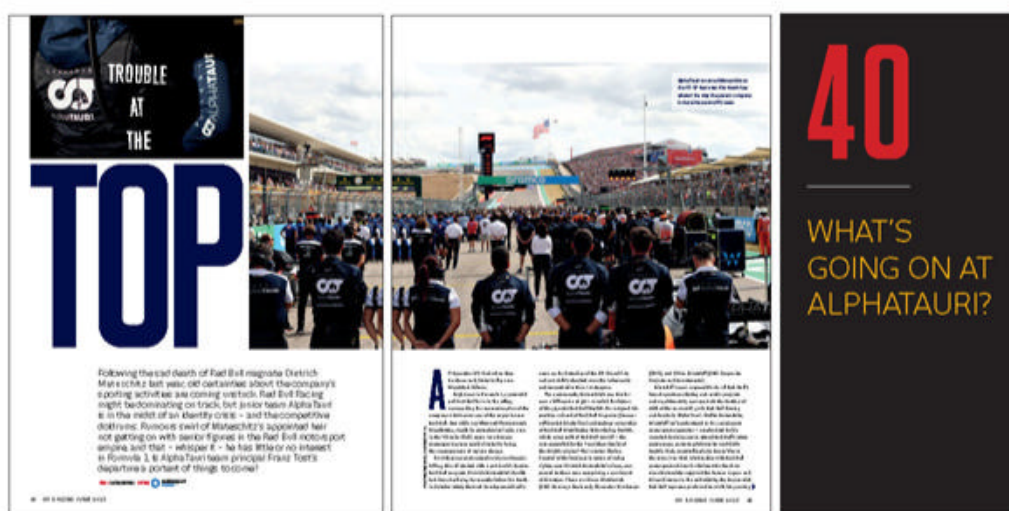
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## Miami's new show isn't to everyone's liking

**will.i.am? Well I never!** The Miami Grand Prix promoters are determined to carve out a unique identity for this recent addition to the F1 calendar and the full-on assault of kitsch and celebrity cameos isn't for everyone. This year's event also presented us with a new format for the pre-race ceremonials, wherein the drivers were presented to the audience individually by the Grammy Award-winning rapper LL Cool J against a background tapestry featuring an honour guard of cheerleaders (whatever happened to the moratorium on grid girls?) and Black Eyed Peas founder will-i-am conducting a 30-piece orchestra.

Naturally this attempt to ramp up the showbiz element met with a rebarbative response from the usual quarters. A mob of naysayers assembled on Twitter to bellow about this attempt to serve up change where no change was required. Drivers who prefer to hide in the garage until the last minute harrumphed about having to get 'on the ice' a little earlier than usual. Members of the Fourth Estate began to mentally compose cynical op-ed columns to slot into Monday's publishing schedule. Sneering at these daft colonials and their foolish ways? Hell, this sort of thing practically writes itself!

Tempting though it might be to join the chorus of derision, I'm going to remain pizzazz-agnostic. F1 is still finding its way in the USA and there's an awareness within the commercial rights holder's leadership that the so-called 'Netflix effect' has a finite lifespan. Exploring new means of connecting

with the US audience makes good business sense.

Clearly there are practical considerations which require more awareness on the part of those who formulate the show. This is a demanding high-performance sport where danger is always in close attendance, so interrupting drivers' established pre-race routines is potentially problematic.

Nevertheless, drivers almost always complain about additions to what they see as the burden of PR work. What they need to recognise is that this is an inextricable element of a mix which ultimately pays their wages: if nobody wanted to watch these people race cars, they'd have to find another (and likely much less well-compensated) job. The Greta Garbo "I want to be alone" routine is fundamentally self-defeating. Be careful what you wish for – if you don't keep the audience serviced, you may get it.

One of the more prominent outlier voices making positive noises about Miami's pre-race show belonged to Lewis Hamilton. The seven-time champion well knows the value of publicity and showmanship to the bottom line. And as our cover feature this month attests, he's cracked the secret to enjoying a long career: matching star power with a steely work ethic, and always being ready to ensure change works to *his* benefit.

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### Contributors



#### MATT KEW

Matt looks at how F1's elder statesmen, Fernando Alonso and Lewis Hamilton, have stayed at the top of their game (p30)



#### ALEX KALINAUCKAS

Autosport's Grand Prix editor dives into the thorny question of what is going on at AlphaTauri in the post-Dietrich Mateschitz era (p40)



#### OLEG KARPOV

A busy month for Oleg is headlined by his exclusive interview with new McLaren team principal Andrea Stella (p52)



#### MARK GALLAGHER

Mark investigates how F1 teams are dealing with the needs of their employees, as the calendar continues to expand (p60)

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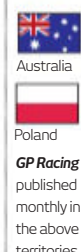
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## No kerbing their enthusiasm

This was my first time at the Miami Grand Prix so I came in with no preconceptions about the circuit or where to go. The chicane was an area many of the drivers complained about last year but it does have a few things going for it visually: there's an elevation change and the drivers have an incentive to spend as little time in it as possible, so they tend to ride the kerbs.

I shot this from Turn 14 where the elevation change means you're low relative to the car, so you can play with the foreground and background. A slow shutter speed adds to the sensation of movement and the right-front wheel in the air shows just how hard the driver is trying.



**Photographer**  
Jake Grant

**Where** Miami, USA  
**When** 5:55pm, Friday  
5 May 2023

**Details** Canon EOS-1DX MkII  
70-200mm lens, 1/30th @ F9













## In the shadow of the turret

For me the Baku City Circuit really comes alive as the lap reaches the walled city (described by UNESCO as “an outstanding and rare example of an historic urban ensemble and architecture with influence from Zoroastrian, Sassanian, Arabic, Persian, Shirvani, Ottoman, and Russian cultures”). Particularly this spot where the cars pass within centimetres of one of the turrets. Add in a qualifying session at the end of the day and all the ingredients were there.

I shot this from the roof of a cinema and the light was changing from lap to lap. It was fantastic – and was about to get even nicer but then the session was red-flagged...



### Photographer

Andy Hone

**Where** Baku, Azerbaijan

**When** 5:25pm, Friday  
28 April 2023

**Details** Canon EOS-1DX MkIII  
70-200mm lens, 1/1600 @ F5.6



## Red Bulls out of the harness

Perhaps the Miami Grand Prix wasn't the most fascinating encounter we'll see this season but what it did demonstrate convincingly is the measure of Red Bull's superiority over the other cars. Max Verstappen and Sergio Pérez were genuinely racing for position and it all added up to a huge gap between them and the rest of the field.

For all the talk of a schism between the two drivers there was genuine warmth as they congratulated each other afterwards. Perhaps Max was pleased Checo didn't take him off when he had the chance! Speaking of which, the revised parc fermé arrangements meant a 'robust' race after the race to stake out a spot to shoot from.



**Photographer**  
Sam Bloxham

**Where** Miami, USA  
**When** 5:04pm, Sunday  
7 May 2023

**Details** Canon EOS R3  
100-500mm lens, 1/1600 @ F5.8









## The Turnpike's not for turning

One of this circuit's USPs last year was the ability to trot up the access road to the Florida Turnpike (which was closed to traffic for the weekend) and shoot downwards over the parapet to get an overhead view of the chicane. Sadly we're not allowed up there any more on pain of being shouted at by the local constabulary so the hunt was on for other angles.

Since second practice didn't kick off until 5.30pm there was bound to be a period of nice golden light as the sun came down. This angle along the back straight makes use of the bridge and ramp of the aforementioned Turnpike to frame the image as the light got really good right at the end of the session.



**Photographer**  
Steven Tee

**Where** Miami, USA

**When** 6:25pm, Friday  
5 May 2023

**Details** Canon EOS R3  
70-200mm lens, 1/2000 @ F6.3















## Miami: fans for the memories

For the Miami Grand Prix Max Verstappen had a special helmet livery and Red Bull ran a fan-designed colourway on its car (obviously the matter of some debate as to how 'special' it was, but the sad fact is F1 cars are now so marginal on weight you can't splash too much paint about). I wanted to get a shot which was distinctively Miami without leaning too much into the artificial marina and other trackside decorations.

This shot was taken at the entry to Turn 12. There's a splash of 'Miami Dolphins blue' in the background and the slow shutter speed emphasises the car's stripes, while Max's helmet remains the focus.



**Photographer**  
Jake Grant

**Where** Miami, USA  
**When** 1:19pm, Saturday  
6 May 2023

**Details** Canon EOS-1DX MkII  
70-200mm lens, 1/40th @ F22



# TOST OFF: NEW BOSS FOR ALPHATAURI

01

**After 17 years at the helm** of a Formula 1 team, Franz Tost is to step down from his role as team principal at AlphaTauri to make way for Laurent Mekies, currently racing director at Ferrari. It remains unclear, however, when exactly Mekies will be able to take up his duties at AlphaTauri's Faenza base.

The announcement of Tost's imminent departure was made prematurely – in response to rumours leaked to the press of Mekies' forthcoming move from Ferrari to AlphaTauri. Initial reports of the Frenchman's intention to leave the Maranello outfit had surfaced at the start of 2023; insiders suggested Laurent was unhappy with the reshuffle following the departure of former Scuderia boss Mattia Binotto and, in particular, the fact that his own candidacy for the role vacated by Binotto had not been considered.

Binotto's replacement, Frédéric Vasseur, denied the

rumours circulating around Mekies in March: "I've known Laurent for 25 years. I trust him. We have a very good collaboration and he will be one of the pillars of the future of the company."

But in the end, as is so often the case in Formula 1, the smoke didn't clear.

## ALPHATAURI SEEMS CONFIDENT THE DISPUTE WITH FERRARI WILL BE SETTLED BY THE END OF THE YEAR

The announcement of Tost's departure was made shortly before the Azerbaijan Grand Prix – brought forward, as Tost himself explained, by media reports, notably in Italy's *Gazzetta dello Sport*, which revealed Mekies' imminent move to AlphaTauri.

"The announcement, to tell you the truth, was not planned for now," Tost revealed. "But as you all [journalists] are very professional, there were some leaks in the press. And I didn't want to come here to Baku and tell you all, 'No, I don't know anything', because that's not the way we work. And then we said, OK, we are going to do the press release. It was planned for later in the year."

For this very reason, according to Tost, the AlphaTauri announcement didn't specify a date for Mekies to start in his new role. The Frenchman has a valid contract with Ferrari – and his release is now the subject of negotiations



**The announcement concerning Tost and Mekies has come at an unsettling time for AlphaTauri. Its parent company Red Bull is believed to be unhappy with the team's performance**

between the Scuderia and Red Bull, which owns AlphaTauri. It has been suggested that in exchange for an early parting of the ways with Mekies, Ferrari could be allowed to speed up the arrival of some Red Bull staff who have already agreed to move to Maranello but are currently on their usual F1 gardening leave. However, Red Bull Racing boss Christian Horner has already made it clear this will not affect any top-level staff.

In any case, AlphaTauri seems confident the dispute with Ferrari will be settled by the end of the year, since Tost is already confirmed to be leaving then.

Mekies will be joined in the team's management by ex-FIA man Peter Bayer, who will become the team's chief executive officer. The duo will share Tost's duties. The announcement stated that "Franz will continue to work with Scuderia AlphaTauri in a consultancy role in 2024", but he himself admits he has no concrete plans yet.



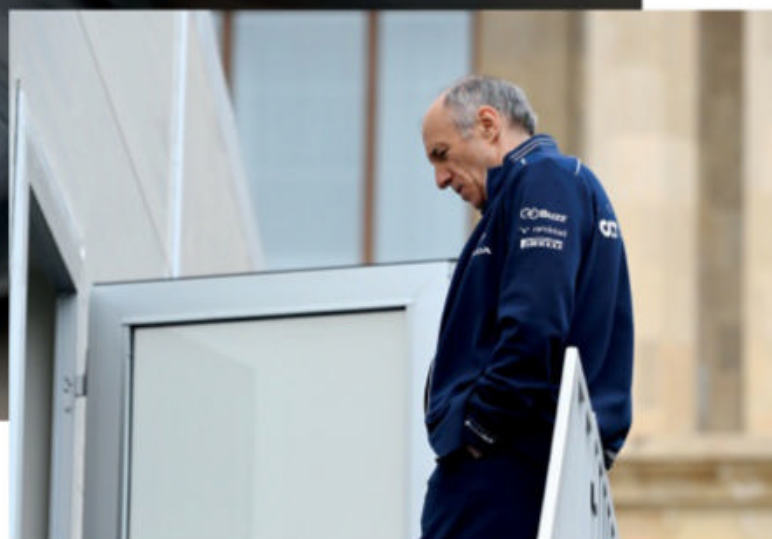


Ferrari's Mekies will be AlphaTauri's new team principal but when the Frenchman will actually start the job is still unclear

PICTURES: ANDY HONE; MARK SUTTON

"We are discussing this," said Tost, who turned 67 this year. "I can tell you now I'm not the guy to look over the shoulders of Peter and Laurent. They are really very good, and they know what to do. I will be there at the beginning, when they are coming, one month or so. But then, 100%, I will step back. I'm not a person to advise someone and to tell someone what to do. They know it. And, this is also a personal desire, a wish from my side: the team has to step up, to come to another level. This was always my intention to bring in new people, new ideas. Formula 1 is developing very fast, they have maybe different points of view, and they should do it. And I'm convinced they can do it much better than myself. Therefore, it's better if I shut my mouth."

Tost emphasised the decision to step down was his own, and that he had discussed future plans with the late Dietrich Mateschitz. However, the announcement has coincided with



Tost is standing down after 17 years in charge of Toro Rosso/AlphaTauri and has stressed that it was his decision to leave

widespread rumours that Red Bull management – and in particular new sporting chief Oliver Mintzlaff – were unhappy with the state of affairs at the Faenza team (see p40).

For Mekies, 46, the experience of running the team will be the first of his career, but he has worked at Faenza before. Laurent began his F1 career there when the small Italian team was still known as Minardi and served as chief engineer when it was acquired by Red Bull and renamed Toro Rosso. He joined the FIA as safety director in 2014 and was appointed deputy F1 race director in 2017 before moving to Ferrari in 2018. ►



## MERCEDES RESHUFFLES TECH TEAM

**02 James Allison has returned to** his role as technical director at Mercedes as the team plots a return to the competitiveness which enabled it to claim eight consecutive constructors' championships between 2014 and 2021. He takes over from Mike Elliott, who will now move into the role of chief technical officer, the position previously held by Allison.

The appointment comes two years after Allison stepped down as technical director in April 2021. In that time, Mercedes has ceased to be a dominant force in F1. The W13 project following the switch to the new technical regulations in 2022 proved unsuccessful and Mercedes failed to win the constructors' title for the first time in nine years. Despite this, the team persisted with the radical 'zeropod' concept for the W14. But the first races of 2023 have demonstrated Mercedes has been unable to close the gap to Red Bull, which won both titles last year.

In mid-April, two weeks before the reshuffle was made public, team boss Toto Wolff denied speculation that Allison would be given a more active role in the development of the W14. In making the announcement of Allison's return to his former role, Wolff stressed the initiative had come from Elliott.

"This was very much driven by Mike Elliott owning the process," Wolff told *GP Racing's* sister publication *Motorsport.com*. "So, we have reversed the roles. Mike has moved up to CTO, as he has a brilliant switched-on scientific mind. And James Allison has returned to his technical director position, reporting into Mike.



Allison checks out the competition on the grid in Baku (above). He returns to the role he left in 2021 with Elliott (below) taking Allison's chief technical officer position



"What Mike's assessment was, and the introspection is really admirable, is that with James we have a gladiator on the field and the troops are going to go through the fire for him and with him. Mike came to the conclusion that the way he approaches things, his skill set, is best utilised in developing the organisation going forward: from technical capabilities to human capabilities and putting together the structure that can be successful for many years to come."

The changes have been made in a way which is entirely in keeping with Mercedes' self-proclaimed no-blame culture. Unlike Ferrari and McLaren, where the team principal and technical director respectively have paid the price for disappointments on track, Mercedes has limited the changes to internal restructuring.

Along with Allison and Elliott trading places, Mercedes has also changed the job profiles of its senior designers.

"John Owen as the director of car design had a very different job profile under the cost cap because, in addition to the creative part of designing a car, you have a tonne of extra work that comes with it," explained Wolff. "What happened is that the chief designer became a cost cap administrator. So, we've split the role. John stays as the chief designer, but we have mandated [his deputy] Giacomo Tortora to become the engineering director. It means John can concentrate on the specifics of the car design, and Giacomo looks after the design office, and the organisational development."

Allison, who said when he originally relinquished his technical director role that he wanted to avoid becoming "an old embarrassment", will now set about putting Mercedes back on the winning track. ▶

## NEWS IN BRIEF... NEWS IN BRIEF...NEWS IN BRIEF...

### FUNDRAISING



IN HONOUR of her late father, former Williams deputy team principal Claire Williams has launched the Frank Williams Academy, supported by the Spinal Injuries Association, with a initial goal of raising £1.5 million in its early years

### TEAMS

McLaren has recalled its former sporting director, Gil de Ferran, to act as a consultant and aid the team in the next phase of its reorganisation. The Indy 500 winner will support team principal Andrea Stella and newly appointed COO Piers Thynne.

### RACES

The organisers of the Miami GP are believed to be in discussions with Formula 1 about making the GP a night race

### TEAMS

General Motors, partner to Andretti Autosport's F1 team bid, is thought to be investigating entering

the championship as a power unit manufacturer as early as the 2027 season

### RACES

The Azerbaijan GP signed a three-year contract extension with Formula 1 ahead of this year's race, which takes the event up to the end of the 2026 season



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- Monaco Grand Prix (26 – 28 May 2023)
- Spanish Grand Prix (2 – 4 June 2023)
- Austrian Grand Prix (30 June – 2 July 2023)
- British Grand Prix (7 – 9 July 2023)
- Hungarian Grand Prix (21 – 23 July 2023)
- Belgian Grand Prix (28 – 30 July 2023)
- Dutch Grand Prix (25 – 27 August 2023)
- Italian Grand Prix – Monza (1 – 3 September 2023)
- Singapore Grand Prix (15 – 17 September 2023)
- United States Grand Prix – Austin (20 – 22 October 2023)
- Las Vegas Grand Prix (TBC) (16 – 18 November 2023)
- Abu Dhabi Grand Prix (24 – 26 November 2023)

## WHICH RACE SHOULD I ATTEND?

Every circuit is different, but some characteristics such as location and weather may determine your preference.

**Austrian Grand Prix** – Surrounded by mountains, lush green fields, and the Styrian Alps, the Red Bull Ring is a popular choice for many Formula 1 fans. With the magnificent alpine scenery of the Styrian mountains, the setting of the Austrian Grand Prix is unique and serves to enhance the look and sound of the F1 cars.

**Belgium Grand Prix** – The majestic track at Spa Francorchamps is a throwback to the past; cars hurtling along a 7km track, weaving through roads in the Ardennes Forest. It all seems a long way from the glamour and ultra-modern facilities of some of its contemporaries. Spa is a firm favourite for F1 fans and drivers, and as a circuit, integral to Formula 1 every bit as much as Ferrari.

**Dutch Grand Prix** – Famous for good racing; infamous for tragedy. Zandvoort retains the undulating nature among the sand dunes of the North Sea coast and is a popular seaside destination in the summer – hot, sunny days are the norm! Plus, scenes in the grandstands are amazing. For everyone there, and everyone watching at home, the atmosphere is palpable and should ensure a place in F1 for years to come.

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## NEW RED BULL DEAL FOR ADRIAN NEWEY

**03** The opening races of 2023 have reawakened a seemingly dormant debate about the lack of spectacle in F1 – and much of the responsibility for that must be borne by Red Bull, winning five races in dominant style. Now there is a real danger this debate could drag on for a few more years, since one of the main architects of Red Bull’s success, Adrian Newey, has extended his contract with the team.

Red Bull has made no official announcement regarding the deal, but the news has been confirmed by *GP Racing’s* sister website *Motorsport.com*. The publication reported that the legendary designer will continue in his role as chief technical officer, overseeing the progress of Red Bull’s F1 team as well as its Advanced Technologies business and its new Powertrains division, launched just under two years ago.

According to Red Bull boss Christian Horner, the prospect of working on the project for the 2026 season, which is when the team also plans to unveil its first F1 engine (albeit carrying Ford branding), proved particularly attractive to Newey.

“Adrian is a very competent engineer regarding all things to do with combustion,” he told *Motorsport.com*. “You can see that he’s fully bought into the concept and sees the potential that it really brings longer term.

“Adrian has been such a fundamental part since almost the beginning. He covers a lot of areas and to have the depth of his experience and knowledge to draw upon, and the way he works with the young guys, it’s great.

“He’s just as motivated as he’s always been and has a great interest in what’s going on in Powertrains, and Red Bull Advanced Technologies as well. So, he covers the three pillars of the campus in Milton Keynes.”

There are no details yet on the length of the new contract for Newey, who turned 64 in December.

Across a 35-year career in F1, he has won titles with three different teams: Williams, McLaren and Red Bull. His association with the latter goes back more than 16 years.



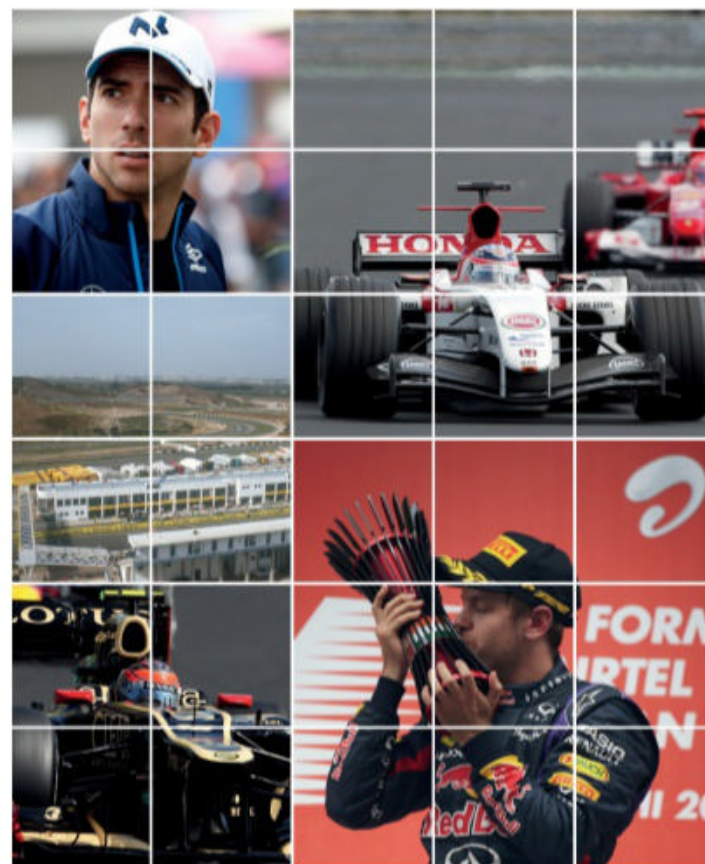
**Newey continues to design race-winning cars and will be part of the red Bull operation for the foreseeable future it seems**

**WORKING ON THE PROJECT FOR THE 2026 SEASON, WHEN THE TEAM ALSO PLANS TO UNVEIL ITS FIRST F1 ENGINE, PROVED PARTICULARLY ATTRACTIVE**

## F1 MASTERMIND

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- Q1** How many races were red-flagged during the 2022 F1 season?
- Q2** Who won the last F1 GP to be held at the Jerez circuit in Spain, in 1997?
- Q3** Only four drivers started the first four races of 2023 inside the top 10. Who are they?
- Q4** Every full-time driver in 2022 scored at least a point, but at what race did Nicholas Latifi become the last to do so: Singapore, Japan or US?
- Q5** How many laps did Takuma Sato lead during his F1 career: 0, 1 or 2?
- Q6** Who am I? I started 61 GPs from 1991 to 1995 for Brabham, Ligier, Tyrrell and McLaren, scoring 32 points and claiming three podiums.
- Q7** Who was the last driver to make his F1 debut after winning the Indy 500?
- Q8** True or false: Sebastian Vettel is the only driver who has won a world championship Indian GP?
- Q9** Jim Clark’s first world championship F1 win was the 1962 Belgian GP. What was unique about his starting position in that race?
- Q10** Which is the only race that Romain Grosjean started from the front row in his F1 career?



1 2 Mika Häkkinen 3 Fernando Alonso, Lewis Hamilton, Carlos Sainz, Lance Stroll 4 Japan 5 6 Mark Blundell 7 Jacques Villeneuve 8 True (3 times) 9 It was the only time he won starting outside the top 10 10 Hungary 2012



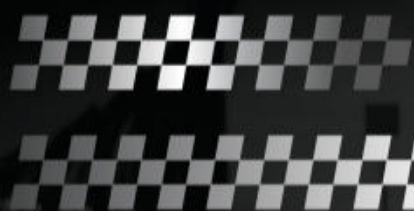


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# THE F1 ANALYST

BEN EDWARDS

@benedwardstv

PICTURES 

title lead was due to a power unit failure out of his control, but the one that really hurt was Monaco. Pole at his home event and an early lead in the wet was undone by chaotic team strategy communications which allowed Sergio Pérez to become a worthy inheritor of the win. So much of Monaco is about qualifying as it takes place on a confined circuit with minimal straights. For some the lack of overtaking can be frustrating and yet weather changes, driver errors and unpredictable breakdowns can change the whole outcome. Of the last 25 grands prix at Monaco, 12 have been won by a driver who failed to snatch pole.

Confirmation of this upcoming 80th Monaco GP emerged late last year, as a new agreement with the Formula One Group was agreed after protracted negotiations. Just like Imola and Barcelona, the contract doesn't last long. All three have nothing confirmed beyond 2026 whereas Bahrain is ensconced until 2035, Melbourne until 2036. Clearly there are factors which may cause famous events to drop out or perhaps alternate with others but subtle changes are being added to attempt to maintain the interest. In Monaco this year, for the first time, TV coverage will be covered by F1TV, increasing the chances of capturing every key moment, while in Barcelona the return to an original circuit layout may help.

## TRIPLE-HEADER SURPRISES ON THE CARDS?

**The first part of the F1 season** has involved over 50,000 miles of travel for those flying back and forth from Europe to each event but, over the next three weeks, those journeys will be focused on countries virtually bordering each other with huge F1 history on their kerbs. The races at Imola, Monaco and Barcelona-Catalunya run back-to-back and each can provide unexpected results.

Along with the UK, Italy is the only country to have hosted world championship events every year since they began in 1950 and, while Imola joined in a little later than Monza, it still has a deep heritage. It is the 60th anniversary of the first F1 race to be held around the Emilia-Romagna woodland, a non-championship event won by Jim Clark for Lotus in April 1963. Unfortunately the team local fans wanted to watch failed to make the grid; Ferrari's heavily revised 156/63 cars weren't yet ready.

Since then, and happily connected by the adoption of circuit name Autodromo Enzo e Dino Ferrari, the team has celebrated eight victories around the narrow, undulating layout, the last by



**In 2006 Fernando Alonso was the last driver to win on the Barcelona layout without the penultimate-corner chicane**

Michael Schumacher in 2006. Frustrated at being beaten by just two tenths of a second the previous year, Schumacher took on the same opponent and, thanks to a scintillating in-lap, he emerged ahead. His rival, a certain Fernando Alonso, still went on to take his second drivers' title that year and he'll be relishing new opportunities to shine in Italy.

Imola dropped off the F1 calendar in 2007 but since it returned in 2020 Ferrari hasn't reached the podium. Charles Leclerc was on target for third last year but a mistake at the Variante Alta chicane came from a common theme at the circuit: clipping a key kerb at just the wrong angle. Charles was fortunate enough to avoid severe damage – but the spin cost him points and all three 2022 iterations of this poignant triple-header dealt painful blows in his attempt to fight for the championship.

Leclerc's non-finish in Spain which cost him the

In 2007 a chicane in the final section of the Barcelona lap altered the style of the venue, creating a technical, slow change of direction before the long straight which reduced the possibility of overtaking. Now it has been reverted to the format of two fast sweeping corners leading on to the start/finish straight, opportunities to pick up a slipstream will be greater and increase the hope for more drama.

That could suit the national hero Alonso. It will be tasty territory for Fernando, who has performed in front of his home crowd on both layouts in great style. He earned his first-ever top-two F1 result in 2003 chasing after Schumacher and won the race from pole when it was last run without the chicane in 2006. He then took his last win with Ferrari in 2013 with the tight left/right final sequence; as ever with Alonso, he'll adapt to anything.

As will the other two on-track world champions. Lewis Hamilton has the most wins in Barcelona, tied on six with Schumacher while Max Verstappen's victory last year took him to the top of the championship, a place he has held ever since. And earning his first ever F1 win on his Red Bull debut in 2016 in Spain must give Max a warm feeling every time he returns. He was helped that year when Mercedes drivers Hamilton and Nico Rosberg made contact on the opening lap. With Red Bull similarly dominant this year, Max and Sergio must avoid getting too carried away or an unexpected result may well emerge again.





Barcelona originally had no chicane at the end of the lap – and this configuration has been restored for this year's race



Leclerc claimed pole at his home race last year and led in the early stages until Ferrari's strategy simply imploded



In 2018 Daniel Ricciardo won Monaco from pole, but the top qualifier doesn't always triumph



Although it is thought of as the 'jewel in F1's crown' Monaco, like Imola and Barcelona, only has a deal to the end of 2026



Alonso's most recent win was in Spain in 2013 so what better place for him to triumph again?



Imola has hosted 26 San Marino and three Emilia-Romagna races, as well as the 1980 Italian GP



Until Imola returned in 2020, the last driver to win there was Michael Schumacher in 2006





# UNDER THE HOOD

PAT SYMONDS

PICTURES  **motorsport** IMAGES

generally a lithium salt, but the cathodes can be quite different in different batteries. The two most common cathode types are LFP and NMC, although many others are vying for popularity since this is where much development to improve performance is taking place.

Of the two electrodes the anode is largely responsible for charging times and the cathode has more to do with range, but it also has a very strong influence on costs. It's the cathode, therefore, which has been the focus of development and hence the fact most batteries in use at the moment are either LFP or NMC. LFP is an acronym for lithium iron phosphate. While lithium prices have increased considerably over the past two years, it's a material over which there are no long-

term concerns over supply. Hence even with the increased raw material costs an LFP battery is considerably cheaper than an NMC, and is found in some of the cheaper battery electric vehicles from MG, Hyundai and base variants from Tesla.

NMC stands for nickel, manganese, cobalt and, not surprisingly, these are the elements that make up the cathode in this type of battery. Cobalt is termed a strategic material because 50% of the planet's reserves of it are found in the Democratic Republic of the Congo, where 20% is extracted in artisanal mines with dubious safety and human rights standards. Much of the processing of the ore is done in China, which accounts for nearly half of the world's production.

The NMC cathodes are significantly more expensive than LFP, with the material costs amounting to 62% of the cost of the cell, but they do give significantly better performance. Because of this the exact proportions of NMC are varied. An NMC 532 cell contains 50% nickel, 30% manganese and 20% cobalt. The trend now is to use NMC 811 which has 80% nickel and only 10% of manganese and cobalt. Others, like Volkswagen, are pursuing high-manganese chemistries which are believed to give the performance of NMC 532 at the cost of LFP cells.

While development focus is on cathodes, anodes are also being experimented upon and the addition of silicon to the graphite material looking promising. Focus is also turning to other chemistries such as sodium-ion. Sodium is abundant and starting to challenge the efficiency of LFP cells. ►

## THE HIDDEN SCIENCE OF BATTERY LIFE

**To many people a battery** is a battery. They may differentiate between the lead acid batteries found in most road cars and the lithium batteries found in battery electric vehicles and also in Formula 1 cars, but few realise there are many different types of lithium ion batteries – each with different characteristics and costs.

The history of lithium batteries is a relatively recent one and the result of cumulative work done in the USA, UK and Japan. This was recognised in 2019 with the award of the Nobel prize to Stanley Whittingham, John Goodenough and Akira Yoshino from those countries respectively.

Before talking of the different types of battery it's worth a quick look at how a battery works since this will indicate why different types of battery have been developed. Essentially a battery consists of an anode, which is the negative electrode, and a cathode which is the positive electrode. In between is an electrolyte which is normally liquid. During charging, the positively charged ions flow from the cathode through the electrolyte to the anode.



**The batteries used in most road cars, apart from electric vehicles, are of the old-fashioned lead acid variety**

They are stored there and when no more can be stored the battery is fully charged. Negative charge electrons flow from the negative electrode to the positive through the charging circuit. During discharge the opposite happens with the electrons flowing through the device which needs power – the electric motor in our case. When all the ions have moved back through the electrolyte to the cathode, the battery is fully discharged.

In a lead acid battery the cathode is made of lead dioxide and the anode is metallic lead. The electrolyte is sulphuric acid. In a lithium ion battery the anode is generally graphite and the electrolyte



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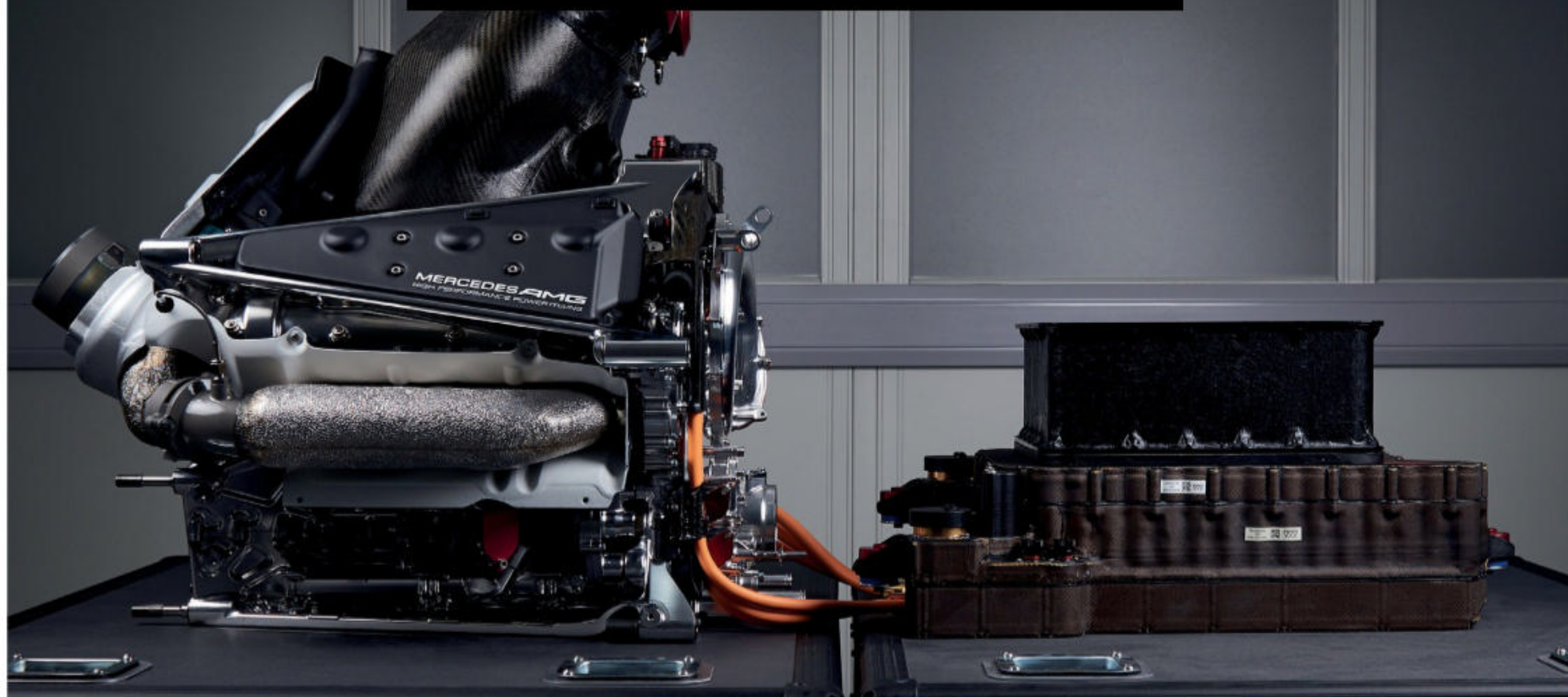


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The battery in an F1 car (right of picture) was, and remains still, an integral part of the new hybrid era, as shown in this 2014 Mercedes engine



Lithium ion batteries are the type used in F1. Lithium costs have increased over the last two years, but there is no concern over its long-term supply



So much for the chemistry, but what makes up a battery? The first level is the cell itself. These are most commonly cylindrical, resembling a slightly overgrown version of the AA battery everyone is familiar with. Some manufacturers prefer pouch cells which resemble a small envelope and have the highest power and energy densities at cell level. The final type is prismatic cells, these are rectangular block-shaped cells but aren't common in automotive use.

The cells, whatever geometry they may be, are connected in groups called modules and these modules are connected together and housed in what we would term a battery. The Tesla Model S has 16 modules, each containing 444 cells. The modules are connected in series, thus a battery contains 7104 cells giving a capacity of just under 90 kilowatt hours (KWh). In different batteries, different configurations of series and parallel connections can determine voltage and capacity.

The last parts that make up a battery are extremely important. One is the

cooling system which must maintain the battery at optimum temperature for use. In road cars this is usually a water and glycol mix, but high-performance batteries may use immersion in a dielectric oil for weight reduction. A battery that overheats is not only inefficient but could be prone to thermal runaway and subsequent fire.

Finally we have the battery management system or BMS. This is a piece of sophisticated electronics and software that gathers data from each cell and

## A BATTERY THAT OVERHEATS IS NOT ONLY INEFFICIENT BUT COULD BE PRONE TO THERMAL RUNAWAY AND SUBSEQUENT FIRE

ensures the cells are balanced in terms of voltage, charge and temperature. It will also monitor safety-critical aspects. The software will then pass information on the state of charge and of health to the energy distribution system, which determines the electrical conduction path through the battery.

So while in essence the lithium ion battery in your torch is a close cousin of the one in an F1 car, it's a simple example of what can grow into an extremely sophisticated energy storage device.





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# STRAIGHT TALK

MARK GALLAGHER

@\_markgallagher

This time on BBC Radio 4's satirical news programme *The Now Show* presented by comedians Steve Punt and Hugh Dennis.

Their proposition is that, as sport becomes increasingly hijacked to feed media companies' demands to provide 24/7 entertainment to customers, the main event becomes diluted.

"Twenty years ago coverage started 20 minutes before the race with a quick summary of qualifying and a look at the grid," said Dennis.

"Now it's 'Join us for race weekend! It all kicks off Wednesday with a full preview and interviews, then don't miss practice for pre-practice at 5pm, then on Thursday pre-practice for qualifying practice followed by the practice session for first pre-qualifying. Friday it's final qualifying pre-practice followed by first qualifying. Saturday, second qualifying, and then on Sunday join us for the grid walk where a baffled Martin Brundle is ordered by the director to talk to various influencers and rappers he's never heard of and who have no idea why they're there.'"

I found myself nodding.

The programme aired one week after Stefano Domenicali discussed

revolutionising the race weekend format.

Reducing practice, moving qualifying, introducing more sprint races, adapting

Formula 1 to continue to attract more fans.

Constant change appears to have become an aim in itself, as though stability must be avoided.

F1's incessant tinkering with its rules, to the point where even the governing body seems to struggle to follow them, is already an issue. Meanwhile the Football Association has not felt the need to put more players on the pitch, adopt quarters instead of

halves or introduce variable goalpost sizes.

It feels odd that an already complex sport wants to add further layers to its events.

The quest is for 'more', of course. More viewers and more spectators on more days across more races in more countries. The drive for growth is understandable – it's Stefano's job after all.

However, he needs to ensure this doesn't turn into a bubble because we all know what happens to them. And that's not funny at all.

## WHEN MORE ISN'T BETTER

**Formula 1's a serious business.** If it's laughs you're looking for I can recommend avoiding official press conferences, media briefings and interviews in the pen, where serious interviewers come up with serious questions to ask drivers who would rather be having a massage.

While the Irish comedian Conor Moore can raise a laugh with his clever impersonations of drivers and team principals, F1 isn't a popular topic with mainstream comedians. David Mitchell, star of TV comedies including *The Mitchell & Webb Look*, *Upstart Crow* and *Would I Lie to You*, positively hates it. So incensed was he by the boredom caused by watching the 2008 Canadian Grand Prix that he wrote a column about it in *The Guardian*.

"Televised Formula 1 is the most eloquent answer to the question, 'What sport could possibly be more of a turn-off than horse racing?'" he wrote, describing the pinnacle of world motorsport as 'televised traffic'.

"The only F1 season I remember following was the one where Nigel Mansell became world champion purely as a result of having a better car than anyone else," he bemoaned, comparing it to, "Monty Panesar [having] such an amazing cricket



**TV coverage has expanded massively over the years but, like the drive for growth elsewhere in Formula 1, this isn't popular with everybody...**

bat that, every time he tried to hit the ball, it went for six despite his limitations as a batsman."

My response to that was the only time I've ever written in to *The Guardian*.

Fast forward to April this year and F1 finally warranted another outing on national media.



# RACE AGAINST TIME

For most of the past two decades Formula 1 has been an increasingly young man's game – culminating in Max Verstappen getting a race seat before he passed his driving test. But now teams seem to be spurning youth in favour of experience. What have the likes of Fernando Alonso and Lewis Hamilton got that the young hotshots haven't? And for how long?

WORDS MATT KEW

PICTURES  MERCEDES AND ASTON MARTIN

FORMULA 1 INCREASINGLY FAVOURS the well-rehearsed. The implementation of a budget cap that trickles down to cover sick pay and catering makes it far harder for a team to sit idle as an inexperienced driver squanders points and precious pounds smearing their car into a wall. Employing a safer pair of hands behind the wheel slashes the likelihood of an upcoming upgraded front wing and revised floor edge having to be scrapped just so the accounts can stay in the black.

See Haas flicking a 23-year-old Mick Schumacher after his second term in the top flight. The European F3 and FIA F2 champion arrived with a decent CV, but a 2022 charge dogged by two seven-figure car-snapping spills led management to get shot of him in favour of rescuing Nico

Hülkenberg, 35, from the sidelines. Since the team also recalled Kevin Magnussen (now 30) last year to replace ousted Russian racer Nikita Mazepin, whose rookie run was abject, Haas boss Guenther Steiner alone can take plenty of credit for the average age of the grid beginning to creep up.

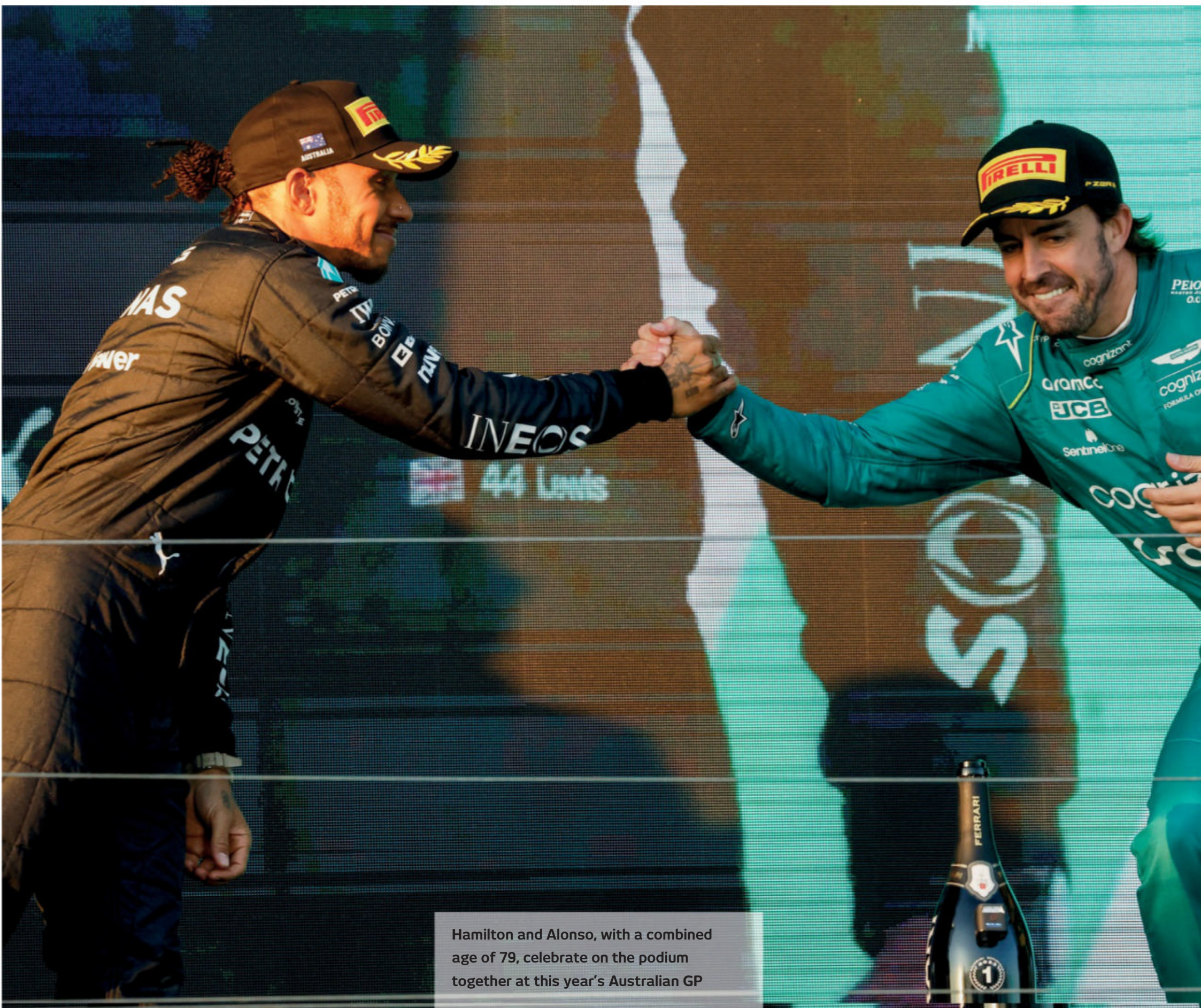
Since 1986, when the average age of the entry list exceeded 31, the field has been getting ever more youthful. It finally bottomed out with a mean of 27 years and one month in 2017, a season after Max Verstappen made his debut while still awaiting a driving test. In fact, so baby-faced was the 17-year-old future double world champion that the FIA revised the superlicence system to ensure such an inexperienced and potentially dangerous operator ►











Hamilton and Alonso, with a combined age of 79, celebrate on the podium together at this year's Australian GP

would never again land a plumb seat so early.

The proliferation of sprint races might only encourage the preference for a tried and tested driver. Following the format changes ushered in just in time for the recent Azerbaijan Grand Prix, the loss of two practice sessions augments the need for a team to rely on someone who can quickly get up to speed, validate a tweaked endplate and optimise suspension setup.

## Time won't give me time

While the legislation leans towards older racers and the debate between F1 being sport or entertainment first rumbles on, this is still largely a meritocracy. If a young driver is quick enough, they're good enough. Aston Martin performance director Tom McCullough tells *GP Racing*: "We always just want the fastest drivers in our car. That helps us look better and get better results. It's about being able to get the most out

of a car in all the different conditions... any [level of] experience."

That assessment reveals something about the Formula 2 protagonists who miss out on a full-time F1 drive, including Aston's own reserve Felipe Drugovich. Since filling in for an injured Lance Stroll during pre-season testing, the Brazilian has been largely left to twiddle his thumbs in the back of the garage and top a rookie Formula E test for Maserati.

That the F2 calendar has been extended to mean the champion might not be crowned until the Abu Dhabi GP weekend, long after the F1 driver market silly season has concluded, doesn't help the prospects of a promotion.

But as the successful graduations of Lando Norris, Alex Albon, George Russell and now Oscar Piastri prove, scouts usually get it right when it comes to identifying the brightest and best talents truly deserving of their place in F1. Likewise, even considering lacklustre AlphaTauri machinery, the eventual call-up for Nyck de Vries, who beat Nicholas Latifi to the 2019 F2 spoils, doesn't suddenly feel long overdue in light of his slow adaptation.

New Williams team boss James Vowles, who formerly managed the Mercedes young driver programme, says of the cycles of the single-seater ladder: "Every now and again, you see some exceptional drivers come through. If I took

**WHILE ALEX ALBON HAS HIT HIS STRIDE UPON LANDING AT WILLIAMS, IT MAY BE SAID THAT HIS EARLIER CAREER ILLUSTRATED THE PERILS WHICH AWAIT YOUNGER DRIVERS**





PICTURES: GLENN DUNBAR; STEVEN TEE; SIMON GALLOWAY



Haas opted for experience when replacing Mick Schumacher. The 2023 line-up of Nico Hülkenberg (left) and Kevin Magnussen boasts over 300 GP starts

Verstappen ahead of his F1 debut in Australia in 2015, aged only 17. Rules brought in since mean no driver will be able to start their F1 career this young again

the cases of Lewis [Hamilton] and George from my previous place, it was very evident in junior series to a certain extent that they were future champions. In Lewis's year, there were a number of drivers that made it to F1. Same with George, in the case of Lando. You seem to have bursts of them for whatever reason – groups of drivers move together through the junior series. It's highly competitive."

While Alex Albon has hit his stride upon landing at Williams, it may be said that his earlier career illustrated the perils which await younger drivers. Red Bull, heralded for a junior programme which unearthed Verstappen, Sebastian Vettel and Daniel Ricciardo, abandoned a youth policy to leave its academy looking weaker than ever. The second seat alongside talismanic Verstappen has chewed up and spat out hot shots Daniil Kvyat, Pierre Gasly and Albon and left Christian Horner to turn to reliable Sergio Pérez, who was 30 when recruited for 2021.

## Let's go round again

Betting on a veteran doesn't always work. The pace of a 41-year-old Kimi Räikkönen left plenty to be desired during his 2021 farewell at Alfa Romeo. The powers of seven-time champion Michael Schumacher were undeniably blunted by the neck injury sustained in a motorcycle incident prior to his 2010-12 Mercedes encore. But the supreme standards being set by the two oldest drivers on the current grid, Lewis Hamilton (38) and Fernando Alonso (41), show what's possible when a driver successfully rages against the dying of the light.

A greater understanding of physiology prompts drivers to work closely with dieticians and personal trainers, and sharpen up their reflexes on Batak-style light reaction machines – all assets the likes of Juan Manuel Fangio (46 when he won his fifth and final championship) had to do without. But when it comes to the longevity of Alonso and Hamilton specifically,

they have proved exceptional at staving off the ravages of time.

Of their secret to sustained success, Hamilton tells *GP Racing*: "Looking from afar and how Fernando is driving, the talent clearly hasn't left him, and I don't believe it does leave us. I think it's to do with your work ethic. He's clearly in great shape and doing an amazing job.

"Racing is really in our DNA, in our blood and we don't put less work in now than we did when we were younger. There's more information out there, how to be fit and healthy. You see it with the greats like LeBron [James, basketball player] and Tom Brady [American football]. There's probably even more focus nowadays than ever before from an athlete's perspective on how to get absolutely everything out of your mind and your body. I'm still hungry as ever, and clearly Fernando is too."

There's a case to be made for the 1990s introduction of power steering easing the physical



Räikkönen's final year in F1 wasn't his best. This FP2 shunt in Abu Dhabi definitely wasn't classic Kimi of old



PICTURES: CHARLES COATES; ZAK MAUGER; SAM BLOXHAM

loads on drivers, something that might favour the older exponents. But the Pirelli tyres becoming less capricious since 2011 and fuel management not being as pronounced – reducing the role of lifting-and-coasting – has taken away some mid-race respite. Meanwhile, the two-hour humid physical onslaught that is the Singapore GP takes its toll on all, regardless of age.

Alonso says: “All this experience and the background that we have is helping us to extract the maximum from the racing cars, and our strength or our physical condition is not the final factor to perform well. We need to be fit enough to finish the race fresh. But it's not that more muscles or being younger will give you more top speed. This is a different concept that we need to tell the fans.”

Nevertheless, extreme dedication from Alonso and Hamilton has kept them fighting fit. Alonso was noticeably trimmer wandering down the Bahrain paddock for pre-season testing ahead of his Aston Martin debut compared with how he left Alpine. Hamilton's shirtless social media snaps leave little about his physique to the imagination. Anything less than a wedge of pecorino could be grated on his abs. This speaks of their awareness of the aging process and a drive to combat it by whatever sweat-inducing means necessary.

It's that determination which sets them apart from those more willing to slide into the retirement home for F1 drivers. McCullough adds: “Fernando's really hungry. He's working and training really hard. He's so self-critical and wants to push himself to another level and over

**“WE NEED TO BE FIT ENOUGH TO FINISH THE RACE FRESH. BUT IT'S NOT THAT MORE MUSCLES OR BEING YOUNGER WILL GIVE YOU MORE TOP SPEED”**

**FERNANDO ALONSO**



2019 F2 champion de Vries (above, left) has made it to F1, aged 28, but the 2022 title winner, 22 year-old Drugovich (above), is spending 2023 on the sidelines

the winter has worked even harder. As you get older, do you need to work harder than a 20-year old? Maybe you do. But he's so motivated, so up for the challenge.”

Mercedes technical director James Allison notes the same fire burning inside Hamilton. He says: “The main thing I put it down to isn't the sport or the way the sport has gone, but just the slightly freakish nature of the gifts that Lewis was handed. He is dedicated, self-critical and still able to pedal the car like a young man.”

## Seasons in the sun

Potentially harder to pin down are the precise sources of motivation in the twilight years of their F1 career. Adding to a tally of victories (Hamilton on 103 plays 32 for Alonso) and championships (seven versus two) is obvious. Plus, in developing ▶



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20/21 May	Snetterton	Kwik Fit British Touring Car Championship	12/13 August	Donington Park	Convoy in the Park – British Truck Racing
27/28 May	Brands Hatch	Masters Historic Festival	13 August	Brands Hatch	Festival Italia
27/28 May	Donington Park	British GT and GB4 Championships	13 August	Cadwell Park	Cult Classics
3 June	Oulton Park	BMW Sommerfest	19 August	Oulton Park	U.S. AutoShow
4 June	Brands Hatch	Brands Britannia	20 August	Donington Park	Tunerfest Midlands
11 June	Brands Hatch	Tunerfest South	26/27 August	Donington Park	Kwik Fit British Touring Car Championship
17/18 June	Brands Hatch	American SpeedFest 10	26/27/28 August	Cadwell Park	Bennetts British Superbike Championship
17/18 June	Oulton Park	Kwik Fit British Touring Car Championship	3 September	Brands Hatch	Festival of Porsche
17/18 June	Snetterton	British GT and GB3 Championships	9/10 September	Brands Hatch	British GT and GB3 Championships
18 June	Cadwell Park	Vintage Motorsport Festival	15/16/17 September	Oulton Park	Bennetts British Superbike Championship
30 June/1/2 July	Donington Park	Motul FIM Superbike World Championship	16/17 September	Snetterton	British Truck Racing Championship
1 July	Oulton Park	Supercar Pageant – Featuring GT Cup	17 September	Brands Hatch	Ford Power Live
1/2 July	Brands Hatch	Super Touring Power Festival	24 September	Brands Hatch	Go Japan!
7/8/9 July	Snetterton	Bennetts British Superbike Championship	23/24 September	Cadwell Park	Vintage Motorcycle Club Championships
8 July	Brands Hatch	Bernie's V8s And Historic Outlaws	29/30 Sep/1 Oct	Donington Park	Bennetts British Superbike Championship
8 July	Oulton Park	Autos de France	7/8 October	Brands Hatch	Kwik Fit British Touring Car Championship
9 July	Donington Park	Vintage Motorsport Festival	13/14/15 October	Brands Hatch	Bennetts British Superbike Championship
14/15/16 July	Brands Hatch	HSCC Legends of Brands Hatch	21/22 October	Donington Park	British GT and GB3 Championships
15 July	Oulton Park	Ford Power Live	22 October	Snetterton	Modified Live
21/22/23 July	Brands Hatch	Bennetts British Superbike Championship	4 November	Oulton Park	Neil Howard Stage Rally and Fireworks
22 July	Oulton Park	Tunerfest North	4/5 November	Brands Hatch	British Truck Racing and Fireworks
28/29/30 July	Oulton Park	Historic Gold Cup	19 November	Cadwell Park	Stage Rally and Fireworks
29/30 July	Donington Park	CRMC Classic Motorcycle Festival			



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Aston Martin into a frontrunner and restoring Merc to its eight-time constructors’ title-winning pomp, both have major parts to play in team-building projects that will go some way to shaping their legacy.

Alonso is also acutely aware of what it’s like to be on the outside of F1 looking in. As good pal Mark Webber notes: “Fernando is worried about being at home doing nothing. Now he has another chance. Now he can enjoy leading a team towards the next big phase of their career. He’s going to be so motivated now.”

The Spaniard was content enough to bid farewell to F1 at the end of 2018 as the turbulent second era of the McLaren-Honda relationship showed little sign of taking him back to the top. Bored of the relentless PR grind, he had grown tired of the corporate nature of the championship and exited stage left.

Two seasons away were decorated by a brace of Le Mans 24 Hours triumphs and a 2018 World Endurance Championship crown with Toyota. He also dabbled with the Dakar Rally and Indianapolis 500. But that all proved disposable when the chance to join Alpine for 2021 arose. Ever since, and with a newfound appreciation



Hamilton knows that while he remains in Formula 1 the audience for his advocacy will remain high




Luigi Fagioli is the oldest winner of an F1 race, albeit a shared drive with Juan Manuel Fangio in the 1951 French GP

The last of Fangio’s five world championship was achieved when the Argentinian was a sprightly 46



But while I feel fast and I enjoy it, I keep racing. “In my case, the two years out of F1 were very important. Even if I was fast in 2018, even if I still enjoyed it, I was tired of the marketing events, the travelling. There were a lot of downs compared with the excitement of driving. They were not compensating each other. The two years out refilled the batteries, and now I’m enjoying on-track, and I have a fresh approach to the non-fun things.”

Similarly, by way of motivation, perhaps Hamilton has considered that the audience for his advocacy will sadly most likely diminish and his voice be less well-heard the moment he steps out of the spotlight. With those prospects, it’s enough for Hamilton and Alonso to jump out of bed and train to keep themselves close to their peak until age one day finally catches up.

There is a measurable recent trend of teams favouring experience to wring out every last drop of car performance, all while preserving points finishes and counting the subsequent prize money which hasn’t been squandered on avoidable crashes. A greater understanding of the human body and more available tools has supported that case. But even then, it appears that Hamilton and Alonso truly are exceptional as they seek to stay rorty well into their forties. 



Alonso threw himself into sportcars during his time away from F1, and that has motivated him to keep going

for Formula 1 gained, his thirst for perfection hasn’t been quenched. Alonso says: “I enjoy things when I win at something. When I go karting, it’s because I know there is someone there and I will beat him, so I like to be competitive. If I were a good golfer, I would play golf in my spare time. But because

if I golf, I lose, I don’t do golf. As long as I feel competitive, as long as I feel motivated and I’m fast, I will keep racing. It will be one day that maybe I don’t feel fast, or I see telemetry and I cannot do that corner at that speed or I cannot brake that late or I cannot be in the simulator or in the meetings. So that day I will stop maybe.





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# PIERRE GASLY

Having escaped AlphaTauri at what seems to have been the right moment, Pierre Gasly is starting a new chapter of his career with Alpine – and he's been keen to get every detail right from day one...

**For the first time since 2019, you've started a new season in a new environment. How is the process of getting to know the team going?**

I must say, so far, I'm extremely happy with the way we're getting to know each other, and the way that they welcomed me and tried to make me feel at home. It's a big change, a lot of new faces, so it needs time to build a relationship with everyone. But it's been quite natural, and things are becoming, let's say, more and more flowing race by race.

**Laurent Rossi mentioned in one of his recent interviews that he was a bit surprised by your request to organise a visit to the engine facilities in Viry – since it's something not many drivers do. Why was it important for you?**

I think, for me, it's just important to show that I want to meet the people I will work with. You've got 1,200 people working for two cars, and basically trying to give me the best tools available. And I think it's quite important for them to know that every day they're working on something – whether it's production, whether it's CFD, whether it's the engine or anything else – that this work is appreciated. So I tried straightaway, last December, to go to all the departments and try to meet everyone on the team.

**Is this a sort of 'trying to win over the dressing room' type of approach? You want people to be on your side.**

I think that's just the way I do things naturally. Basically, the way I see it is I try to put myself in other people's shoes and try to imagine what would I have liked to see, if I were in their position, what would I want from the drivers

I work with? And if I would want to see this kind of approach, then that's what I need to do. And it's not like I'm trying to force myself. At the end of the day we're doing it as a team, and we need to be a team. Just being objective, in Formula 1 you never win without a team. You can be the best driver in the world, but if you don't have every single person on the team behind you, it just won't work. And you see it from the past. You saw it with Michael [Schumacher]. You see it now with Max [Verstappen] and Red Bull, you see it with Lewis [Hamilton] and Mercedes.

**And there are a lot of people in this team who worked with guys like Fernando Alonso, Kimi Räikkönen, Daniel Ricciardo...**

I try not to compare. Everybody's unique. What works for Kimi will not work for me. What works for me will not work for him. I've learned through the years that you can't copy someone. The best you get by copying someone is being slightly worse than who you really are. So I just try to provide the best version of myself, and that goes by doing all these things, trying to meet the team, trying to be involved and show dedication, show that I'm behind them. And I'm not here to just fight for top 10s. I have ambitions, I'm at

this stage of my career where I want results, and I want to fight at the front. And that's what we talked about with Alpine as well. Their ambitions match mine, and that's why we're all dedicated to this project together. Because there is the will of going further than what we're doing now. I really believe it's possible. It might take some time, but the target is to reduce this time as much as possible and make it happen..

**Are any lessons from the time when you moved to Red Bull proving useful now?**

A lot. I always say, you either win or you learn. And I think that's a perfect description of what happened with Red Bull. I think there were a lot of lessons learned. On my side, and I think also from their side welcoming a new driver. And yeah, I'm making the most out of these lessons now.

**Is there something you try to do now that you didn't do back then? Or, the opposite, maybe you avoid doing something that wasn't helpful when you joined Red Bull?**

I don't want to go into too many details. I've spoken so much about this since 2019, and we're in 2023 now. Maybe one day I'll open up more and reveal more details about it. But, definitely, I've learned a lot. And in my approach today there are a couple of things that are different. I'm not saying better – but different. Again, I'm trying to make sure I can grow in the best environment possible, that I can evolve and maximise my potential. The team wants me at my best, and I have certain needs or requirements. And we all try to meet in the same place so everybody's happy and the environment is healthy.

**I'M AT THIS STAGE OF MY CAREER WHERE I WANT RESULTS, AND I WANT TO FIGHT AT THE FRONT**





# TROUBLE AT THE

# TOP



Following the sad death of Red Bull magnate **Dietrich Mateschitz** last year, old certainties about the company's sporting activities are coming unstuck. Red Bull Racing might be dominating on track, but junior team AlphaTauri is in the midst of an identity crisis – and the competitive doldrums. Rumours swirl of Mateschitz's appointed heir not getting on with senior figures in the Red Bull motorsport empire, and that – whisper it – he has little or no interest in Formula 1. Is AlphaTauri team principal Franz Tost's departure a portent of things to come?

WORDS ALEX KALINAUCKAS PICTURES  motorsport  
IMAGES



AlphaTauri mourned Mateschitz at the US GP last year. His death has altered the way the parent company looks at its second F1 team



PICTURE: RED BULL CONTENT POOL

All dynasties fall. And when they do chaos and, historically, even bloodshed follows. Right now in Formula 1, a potential political thriller is in the offing, surrounding the succession plan of the company which owns one of the super-teams: Red Bull. But while any *Game of Thrones*-style bloodletting would be metaphorical only, even in the ‘Piranha Club’, some very famous motorsport names could already be facing the consequences of regime change. As with many past examples of great houses falling, this all started with a patriarch’s demise. Red Bull magnate Dietrich Mateschitz’s health had been declining for months before his death in October 2022; that sad development finally

came on the Saturday of the US Grand Prix and yet visibly shocked even the infamously undemonstrative Max Verstappen. The next month, Mateschitz’s son Mark – now a billionaire at 30 – revealed the future of the gigantic Red Bull GmbH. He resigned his position as head of Red Bull Organics (its non-caffeinated drinks line) and took up ownership of Red Bull Distribution & Marketing GmbH, which owns 49% of Red Bull overall – the rest controlled by the Yoovidhya family of the drink’s original Thai creator Chaleo. Control of the business in terms of voting rights, once Dietrich Mateschitz’s alone, now passed to three men comprising a new board of directors. These are Franz Watzlawick (CEO Beverage Business), Alexander Kirchmayr

(CFO), and Oliver Mintzlaff (CEO Corporate Projects and Investments). Mintzlaff is now responsible for all Red Bull’s famed sports marketing and media projects and so, ultimately, now controls the destiny of 20% of the current F1 grid: Red Bull Racing and Scuderia AlphaTauri. Unlike Mateschitz, Mintzlaff isn’t understood to be a passionate motorsport supporter – emphasised by his reported decision not to attend Red Bull’s 2022 post-season party to celebrate its world title double. And, most tellingly, he doesn’t have the same iron-clad relationship with Red Bull motorsport advisor Dr Helmut Marko. Ever since Mateschitz acquired the former Jaguar and Minardi teams in the mid-2000s, the denim-clad Red Bull supremo preferred to wield his growing



power from the background while former F1 racer Marko represented nothing less than his living paddock embodiment. Marko was a pivotal figure in both acquisitions and ensured key allies of his – Christian Horner and Franz Tost – were put in charge of them.

## THINGS FALL APART

Remarkably, Marko revealed the extent to which his relationship with Mintzlaff is different to that with Mateschitz in an interview with Red Bull-owned website *Speedweek*. There he stated the pair have met just twice, briefly, and that Mintzlaff didn't wish to be briefed after every F1 track session as Mateschitz had done.

"The direct, personal, friendly relationship is no longer there," Marko claimed. "Didi [Mateschitz] was a visionary, had emotions. I am not seeing that anymore."

That interview followed Verstappen and Sergio Pérez claiming Red Bull's 1-2 in the 2023 Bahrain season opener. Success and ensuing prize money and sponsorship influx – its Oracle deal alone is rumoured to be worth \$500m – protects the jewel in Red Bull's sporting empire. It also has Verstappen's services until at least 2029 and an upcoming 2026 Ford powertrain deal as additional security.

But AlphaTauri has no such protection and this realisation again links to the timing of Marko's Mintzlaff-mincing words. Because at the Bahrain test which preceded Verstappen's GP win the esteemed German publication *Auto Motor und Sport*, which has reliable links with the Red Bull F1 camp, published a story claiming the new Red Bull management was considering selling AlphaTauri.

The Faenza-based team has been here before – back in 2009 Mateschitz put the team up for sale when F1's customer-car loophole closed for the following year. But he ultimately didn't sell and what was then Toro Rosso continued as the junior-driver production unit which eventually delivered Verstappen as successor to Sebastian Vettel. Now, though, AlphaTauri has followed bountiful 2020 and 2021 seasons – where compliant, confidence-boosting designs delivered the memorable peak of Pierre Gasly's Monza 2020 victory – with ninth place in the first season of F1's new ground-effect era. Hence reports of fresh concerns from the executive floor over whether the expense of competing justifies such meagre returns. Logically, these reservations would stem from Red Bull's new marketing tsar.

That 2022 constructors' result cut AlphaTauri's prize income by approximately



After a glitzy launch in New York (above), 2023 has so far been a disappointment for the team

Tost (below, left) with Marko. Both have denied that AlphaTauri is up for sale but the rumours persist







Verstappen and Vettel both moved from junior to senior Red Bull team with great success



PICTURES: RED BULL CONTENT POOL; MANUEL GORIA

\$30m and it lacks the blue-chip sponsor backing its sister team possesses. Plus, the aim of rebranding Toro Rosso after Red Bull’s in-house fashion line – so to be more than just a junior squad, rather a “sister team” as Horner put it in 2020 – is said to have produced little of the desired return in clothing sales. *AMuS* claimed Red Bull’s new overarching management was assessing whether it could relocate its smaller F1 team fully to the UK, where its aerodynamics office is based in Bicester. If that couldn’t be done, a sale assessment would follow.

## DEAL OR NO DEAL

Tost issued what can only be described as a weak denial of the potential sale ahead of the Bahrain race. Tellingly, he alluded to having “some very good meetings” with Mintzlaff in which he received assurances of “continued support in the future” – all of which suggested a very different and less cuddly management relationship than having Mateschitz on speed dial.

Marko had already dismissed what the whole Red Bull camp called “rumours”. As is his wont, Marko kept AlphaTauri’s feet to the fire by stating “the overall result is not satisfactory” when considering the near-opposite 2022 championship positions of Red Bull’s two teams.

But someone, with delicate Machiavellian manoeuvring, clearly wanted the story out there – either to try and kill an AlphaTauri sale or possibly hasten it.

That really intensifies the spotlight on the team right now. As does its poor start to the 2023 campaign, in which AlphaTauri had the slowest car on average over the opening three rounds and only joined Williams in claiming a first point thanks to Yuki Tsunoda’s fortune in the late Melbourne madness. The ATR04 lacks “low-speed aero performance”, per team technical director Jody Egginton, which means its drivers struggle for confidence and therefore pace mid-corner. AlphaTauri’s technical team, which had identified the car’s shortcomings in pre-season and acknowledged it had hit only “some” of its development targets (according to Egginton), took the first of five planned steps to correct this by bringing a major floor update to Australia. Tsunoda promptly damaged his beyond repair in an FP1 off.

But it was a race earlier where perhaps the most damning indictment of AlphaTauri’s early 2023 predicament was uttered. In Jeddah, Tost claimed “the engineers tell me we make some good progress, but I don’t trust them anymore” – causing jaws to drop in the FIA press conference in which he was speaking. This could easily be ►



## ALPHATAURI DYNASTY

### THE PATRIARCH:

**Dietrich Mateschitz**

The man behind Red Bull. Well, its uber-successful marketing exploits at least.

After discovering the original energy drink while working in Thailand in 1982, Mateschitz launched its potent derivative in the west, forming Red Bull GmbH (now worth over \$5billion) in 1984. His motorsports exploits began in 1989 with a deal with Gerhard Berger, followed by a sponsorship of Sauber (a relationship which soured after Peter Sauber chose Kimi Räikkönen over Helmut Marko's preferred driver, Enrique Bernoldi).

Mateschitz's F1 power materialised with his purchase of the Jaguar squad and Red Bull Racing's 2005 launch. Adding Toro Rosso as a vehicle for advancing Red Bull's junior programme in 2006 meant owning 20% of the grid for most of the next 16 years. All the political clout that afforded contributed to the senior team's rise to F1 superpower status.

Low-key and relaxed in style, Mateschitz wielded his power through lieutenants – up until his death in October 2022.

### THE HEIR:

**Oliver Mintzlaff**

As a former world championship level half-marathoner, Mintzlaff certainly has the stamina to lead all Red Bull's non-beverage concerns following Mateschitz's death. That led to the former Red Bull supremo's role being carved into three, including two CEO-level positions, one of which became Mintzlaff's Corporate Projects and Investments gig.

In his new position, hand-picked by Mateschitz, Mintzlaff controls all Red Bull's sports ownership and event-marketing operations. In F1 terms, this means he is ultimately responsible for Red Bull and AlphaTauri, although he's said to share little of Mateschitz's motorsport passion.

After time at Puma in his native Germany, he joined Red Bull in 2014 and was soon made CEO at the RB Leipzig Bundesliga team – a role he exited in late 2022 to begin his tenure at Red Bull's marketer-in-chief.

### BEHIND THE THRONE:

**Helmut Marko**

Dr Helmut Marko is the fearsome boss of Red Bull's junior programme and extremely powerful advisor to its F1 teams.

Marko became an F1 driver alongside friend Jochen Rindt, but he had more success – winning Le Mans in 1971 – in sportscar racing. His racing career was ended when a stone pierced his visor during the 1972 French GP and blinded him in his left eye.

Stints as a driver manager preceded establishing his own RSM Marko single-seater team which eventually became the Red Bull Junior Team in F3000. It was here Marko forged ties with Christian Horner, the racer who would become a successful team manager, but it was his long-association with Mateschitz that produced his current power. This began before Red Bull's formation and during Marko's racing days, where Mateschitz was a fan. All through Red Bull's team ownership days Marko – operating without an official Red Bull squad contract – reported to Mateschitz alone. His typically forthright press

utterings often run contrary to what the F1 team would like promulgated in the sanitised PR game.

### THE FOOTSOLDIER:

**Franz Tost**

The second-longest serving current F1 squad boss, behind Christian Horner, having been team principal at Toro Rosso/AlphaTauri since Red Bull bought Minardi in 2006.

Tost's initial foray into motorsport was as a driver – winning the 1983 Formula Ford championship in his native Austria. But he turned towards a management career as a student.

Driving instruction work in the early 1980s led to management jobs with various F3 squads until 1995, by which time he was team manager for Wili Weber's WTS team. This led to a close relationship with Ralf Schumacher – Tost even joined him in Japan for a successful 1996 Formula Nippon campaign – which continued into the German driver's F1 career and Tost becoming Williams' track operations director from 2000-2005. Hand-picked to run Toro Rosso/AlphaTauri, he is devoutly loyal: in

his signing-off quote in the press release announcing his departure, he pointedly thanked Dietrich Mateschitz alone.







considered the sign of a team principal under extreme pressure – no matter what reassurances Tost publicly claimed to have received from Mintzlaff. At the same time, it chimes with the philosophy of a stern disciplinarian who once wrote “

**ANYONE WHO LISTENS TO WHAT HIS BEST MATE OR GIRLFRIEND SAYS ABOUT RACING HAS LOST ALREADY”**

and believes any F1 team staff unhappy with the lengthy modern F1 calendar “should go”.

But while a comprehensive early season update plan could yet revitalise AlphaTauri’s on-track form in what is a close and massive midfield, its raison d’être may already be broken.

This concerns Red Bull’s junior programme – Marko’s personal fiefdom – producing no actual junior F1 racers since Tsunoda’s 2021 debut. For 2023 he has been joined by the 28-year-old Formula E champion Nyck de Vries, which draws a stronger parallel with Sebastien Bourdais’ brief F1 elevation after four Champ Car titles in 2008 than the programme’s professed focus on young up-and-comers.

## JUNIOR SENIOR

Fast-tracking Gasly and Alex Albon to Red Bull backfired in the years following Daniel Ricciardo’s exit as Verstappen’s team-mate – to the extent they now race outside the Red Bull fold. So, it was to veteran Sergio Pérez Red Bull turned for a driver who could support Verstappen’s title campaigns from 2021 onwards. Only Checo’s now-fractious behind-the-scenes relationship with the Dutchman really imperils his position while Red Bull keeps winning. Tsunoda continues to be an occasionally wild proposition and there is no vigorous Marko clamour for his promotion, as there once was with Verstappen – for it was Marko who was the most vital agitator in Red Bull signing Max as an F3 rookie in 2014, and who fast-tracked him to F1.

Of the remaining juniors, Juri Vips wasn’t thought to be F1-bound even before he was rightly dropped for uttering a racist slur while gaming online last year. That career momentum is also missing for 2023 Super Formula racer Liam Lawson, who also lacks Tsunoda’s Honda ties. There are six Red Bull juniors racing in F2 in 2023, but none have Verstappen-like career impetus right now, and Red Bull lost the chance to sign a driver who did: Oscar Piastri.

All of that is actually good news for Tsunoda, ►

PICTURE: CHARLY LOPEZ





Mintzlaff (left, with Verstappen and Marko) is said to lack Mateschitz's passion for F1

who may therefore last longer than the three years Tost considers ideal for assessing an F1 driver's potential (and which also seems to be the length of Marko's patience, judging by historical precedents). Despite his Melbourne practice gaffe, Tsunoda has delivered elsewhere – such as in his feisty defence against Kevin Magnussen's faster Haas in Jeddah – and de Vries has that three-season buffer on his side to improve from his low-key start as a full-time F1 rookie.

De Vries' theoretical three-year initial stint will conclude just before F1's next rule-change era begins in 2026 – plenty of time for Mintzlaff's longer-term thinking to start playing out and for Marko, now 80, to perhaps exit in a manner he deems fit, if indeed he does so. He has already dropped hints, such as, "I'm a free person, I can stop at any time if I'm no longer happy." It's also rumoured that Red Bull Racing's decision to back out of a 2026 deal with Porsche – one so close to being done that press releases were ready to send – went against Mintzlaff's position.

Tost is already preparing to leave. The 67-year-old's departure was announced ahead of the Azerbaijan GP in a manner calculated to give the impression of an orderly change at the top.



Pierre Gasly's 2020 win was followed by a good 2021, but the team has struggled since then

Former FIA secretary general Peter Bayer will take the newly created position of CEO at the end of this season and Ferrari sporting director Laurent Mekies – also a former FIA man – will take over from Tost as team principal. It had been ►

PICTURES: RED BULL CONTENT POOL; SETEVN TEE



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## 'TAURI STORY

What began as the Minardi Formula 2 team in 1979 has been known longest under Red Bull's ownership (from 2006) as Scuderia Toro Rosso.

Engine usage between Red Bull's two teams has differed through the years – the senior team used this as convenient way to switch from Ferrari to Renault power for 2007. But, most famously, Red Bull's whole junior-team concept was envisaged as a means of exploiting F1's old rules regarding customer cars. When this arrangement was outlawed in 2010

Toro Rosso had to begin producing its own designs, albeit heavily influenced by those previously conceived and then subsequently developed at the main team.

F1's rules regarding 'listed parts' sales between teams partially opened the customer-car concept once again in 2015 – essentially setting out which parts *had* to

be designed and built in-house and which could be bought in. Haas took advantage of this by forming a close alliance with Ferrari. Since 2019, when Red Bull joined Toro Rosso in running Honda power, a similar 'synergy' initiative – as Red Bull calls it – has been in place. Toro Rosso also shifted to using Red Bull's more sophisticated windtunnel.

The most visible change in the second Red Bull squad's history came in 2020, when its identity was co-opted to promote in-house fashion label AlphaTauri. This led to the team adopting the white-dominated look we see today. AlphaTauri's stylists also produce the race clothing worn by Formula One Management staff and F1TV presenters.




**The future of the team remains unclear. If it is put up for sale there are potential buyers out there**

strongly rumoured since the start of the season that Mekies, who had served as Toro Rosso's chief engineer and latterly head of vehicle performance before his FIA stint, was looking for another job.

As ever in business, regime change leaves those closest to the former leader weak: the new chief will want to bring in new people loyal to them. The appointment of a CEO with no established ties to previous Red Bull management suggests Mintzlaff wants AlphaTauri to have a measure of independence and greater commercial viability. It means a sale is potentially less likely in the immediate future.

Potential buyers are still out there. These would include Panthera Team Asia – with or without backing from Hong Kong insurance billionaire Calvin Lo – Hitech GP, and Andretti. All would ideally like to be additional F1 entrants, but plans to push the current anti-dilution joining fee from \$200m to \$600m may force them to take over an existing team. Many of these are currently valued at around \$750m, which isn't much more (relatively speaking) when you factor in their existing infrastructure. Someone meeting AlphaTauri's valuation and wiping out its losses suddenly isn't such a far-fetched idea.

Ultimately, Red Bull's second team doesn't have to win – Verstappen, Horner and co can take care of that. But AlphaTauri also can't keep splashing its benefactor's cash for backmarker results when there's a new sheriff in town... 



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## ISLAND OF THE ENGINEERS

Alex Chan, Alfa Romeo race engineer on Valtteri Bottas' car, takes us through the team's setup in the middle of the garage at every grand prix

INTERVIEW OLEG KARPOV PICTURE ALFA ROMEO

**1** "This is what we call 'Isola', it's an Italian word for 'island' – because it's a standing desk for the engineers in the middle of the garage."

**2** "On the right-hand side you see here Jörn Becker, Zhou Guanyu's race engineer. My desk is on the opposite side of the garage, and we're always in these positions during practice sessions and qualifying. From here we have a direct line of sight to the driver in the car. Then, obviously – depending on setup, since every pit complex is a bit different – we might also be able to see out into the pitlane and the pitstop position. It's simply the best view of seeing what's happening in the garage and on the car."

**3** "Each of us here has a screen up there that's connected to a PC behind. Then we'll set our laptops underneath, and basically connect the two together."

"For me, in my role, I mainly use ATLAS [Advanced Telemetry Linked Acquisition System] – a software package which is used to capture, distribute, display and analyse data – for the live telemetry, timing screens, and also the GPS map because I need to let the driver know about traffic, what's going on in the race and so on. Also, I have lots of alerts for track status: if there's a Safety Car or red flag or anything like this, we have some big flashing warnings. Same for, let's say, a tyre puncture – we have something that detects this and I immediately get a warning."

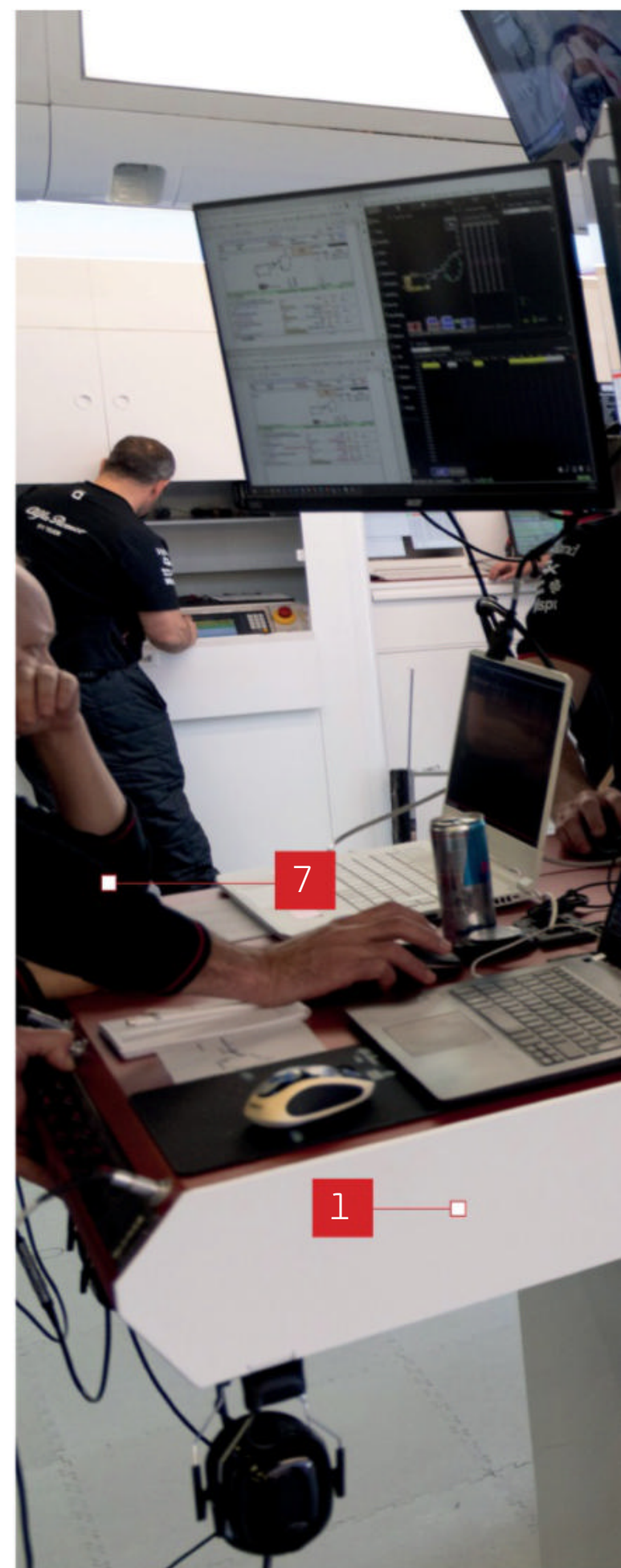
"On my laptop, I also have the run sheet. It's a combination of different data sources: we have the timing and the setup data, so we can keep track of what we change on the car. It's also where I record the driver's comments. When we're debriefing after a run, I'll be typing the main points of what Valtteri's saying into the run sheet."

**4** "Next to the race engineer is the performance engineer – that's the same on both sides. It's Chris Pirro on this side of the garage, and I work with Andrea Benisi on the other. They typically are much less focused on what's happening in terms of on-track action – GPS, or where we are in the race – and mostly look at the data coming from the car."

**5** "On the left-hand side is our tyre engineer, Domenico Desiante, the only asymmetrical position compared with the other side of the garage. On the opposite side is the desk of Yuriy de Zwart, our aero track engineer. Domenico is monitoring live tyre data from both cars, looking at temperatures, pressures and wear. And Yuriy will, obviously, monitor aerodynamic parameters."

**6** "Then, at the far end, we have reliability engineers. The idea is that they can see both sides of the garage simultaneously. Apart from usual telemetry data, on their monitors, they'll also be watching the onboard videos and circuit feeds to see, especially in the race, if there's any issue. So if one of our drivers had a contact with another car, for example, they'll immediately try to see if there's damage."

**7** "On the other end, we have positions for chief mechanics. From here they get a view of both crews and can see what's happening on both cars. Normally, the top screen is displaying the TV feed because we also have the guest viewing area at the back. Then there are two other monitors a bit lower. Normally one is dedicated to pitstops, so there's all the data coming from the pit gantry itself, it's feeding into there, and guys can monitor the status of everything and the pitstop times. They make sure that the job lists for mechanics across the garage have been completed."



**8** "Each position is equipped with its own intercom panel. We have different communication channels. Mainly it's only the race engineer who speaks to the driver, but the performance engineer can also be going through the driving-related stuff with the driver during practice sessions. The team channel is to communicate with the mechanics, and then we have a series of intercom channels to





communicate between the engineers.

"It's push-and-hold to talk. Each channel can have its volume adjusted individually. And sometimes – especially during the race, if something chaotic is going on – you can press the volume rocker and it mutes the channel fully."

**9** "Since space in the garage is limited, we try to use every square centimetre available."

So underneath our desks there's additional storage for mechanics, where they usually store stuff that they shouldn't need to be getting in and out during a session."

**10** "We have two cameras on top, one for each side of the garage. The images from those are sent live back to the factory, so those in the operations room can have an

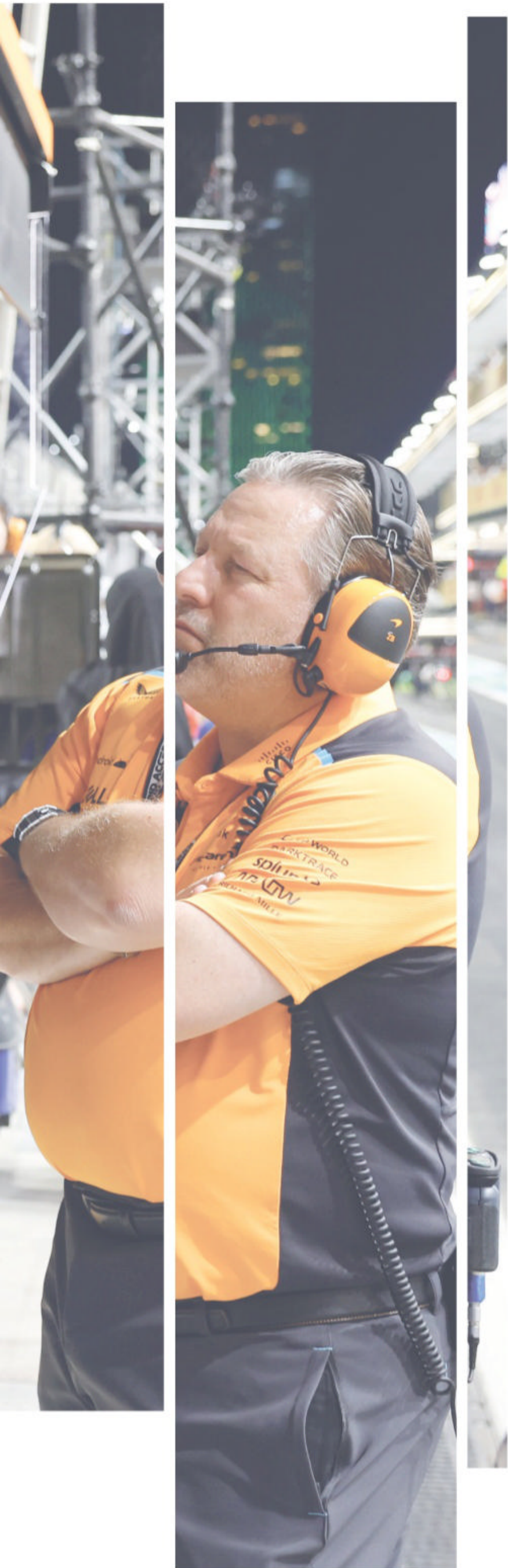
idea of what's going on in the garage. It helps, for example, when they might have some information they want to pass on, but if they see we're really busy in the garage, they'll wait if it's not urgent. Also, we can monitor it from our motorhome office outside of the sessions – again, for me, for example, it's useful if I need to contact mechanics, I can see if it's a good moment or not."





PICTURE: STEVEN TEE





# WORKING PROGRESS

McLaren's new team principal **Andrea Stella** got his Formula 1 break working for Ferrari during Michael Schumacher's pomp. Can he instil the lessons from that period into a team that's been struggling to rediscover its own days of peak performance?

WORDS OLEG KARPOV  
PICTURES  
motorsport  
IMAGES

## IT WAS AN

“acoustic trigger”, as he puts it, which lured Andrea Stella, a student of La Sapienza University in Rome, into the Formula 1 world. He had dreamed of being part of it since he was a child, yet when the chance suddenly arose to work not just in Formula 1 but at Ferrari – Michael Schumacher's Ferrari – Stella started to have second thoughts.

“The reason I studied engineering and in particular aerodynamics is because, yes, I was definitely very interested if not properly passionate about Formula 1 from my childhood,” he tells *GP Racing*. “So, I wanted to set my educational path in a way that I could be ready one day to join F1.

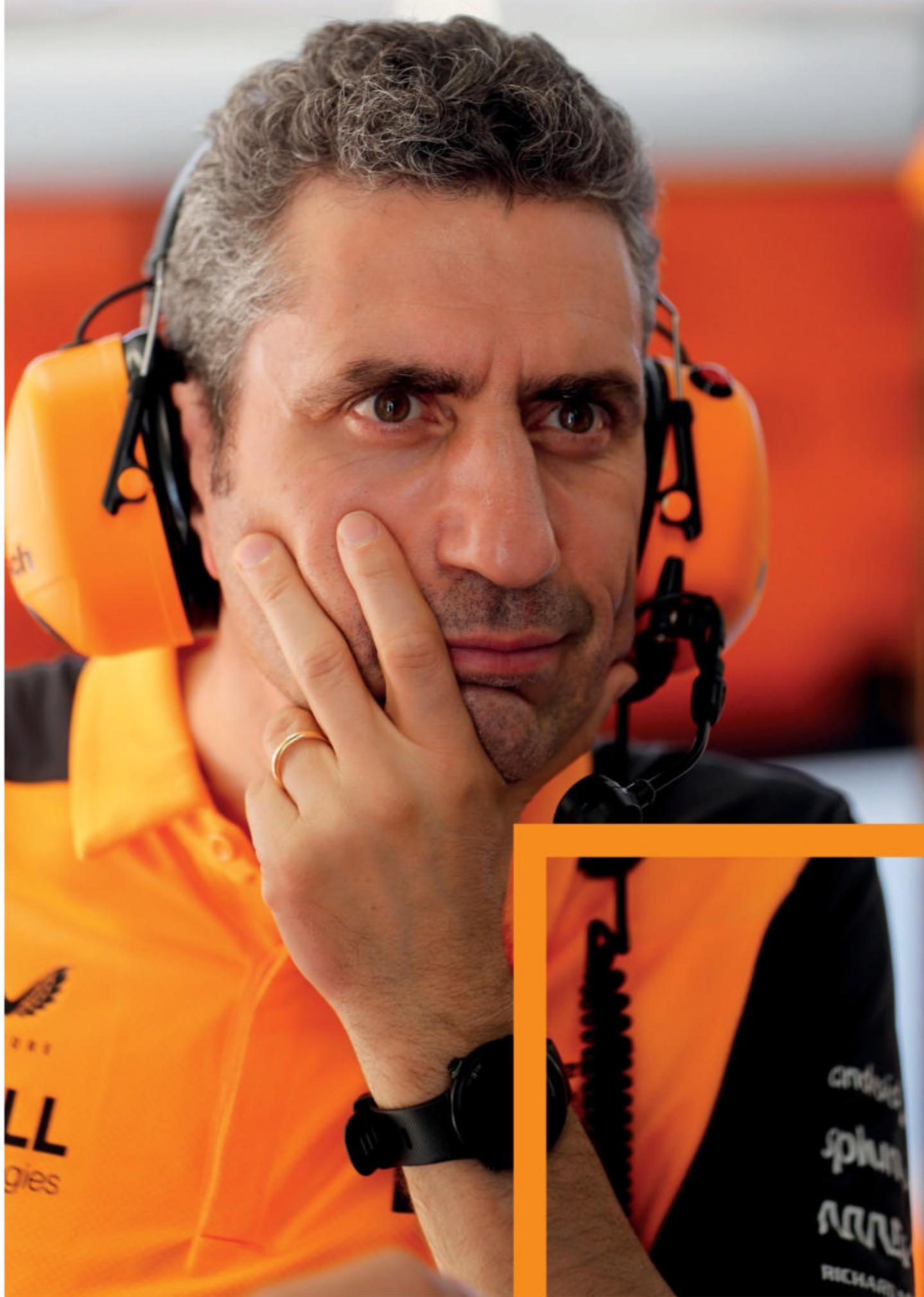
“I was working at the university for a PhD. And my tutor knew a guy at Ferrari who was looking to expand the test team. So this guy, his name is Luigi Mazzola, was in charge of the test team at the time, and he asked the university to provide some names. So my tutor for the PhD provided mine. He knew I had this passion for F1. Ultimately it was the reason why I was studying aerodynamics, right? So, I entered this process of selection, and it was successful.

“But I have to admit that while I was at the university, studying aerodynamics and aircraft, I got passionate about aircraft too. So when the possibility to join Ferrari came, I had to really think, what do I want to do with my life?”

That Andrea Stella didn't end up designing aeroplanes may well be a matter of random chance.

“After the second interview at Ferrari, I was walking away from the factory, I was still 50/50,” he smiles, “but there was the car testing in ►



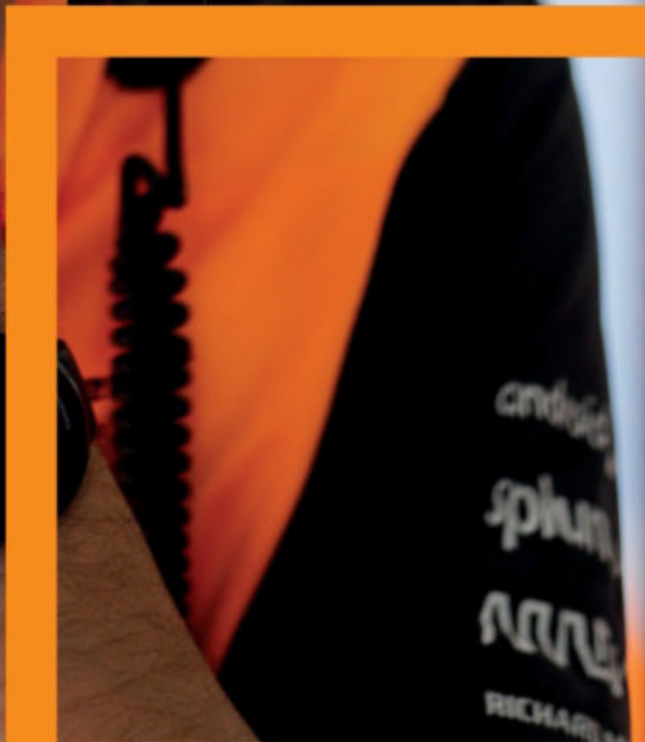


technical director Ross Brawn would serve as F1's sporting boss, team manager Stefano Domenicali is now its CEO. Going over the F1 luminaries who'd worked at Ferrari in that period, it's so easy to forget someone. Mattia Binotto, Simone Resta...

"...Nikolas Tombazis, James Allison, Rory Byrne," Stella adds.

Perhaps it's a textbook example of strong individuals working together and making each other even stronger. You can see here the template for what Stella is now trying to bring together at McLaren.

"I think [it's the case] when you remove some distractions, limitations associated with your ego, associated with your own ambitions, associated with some of these elements of human beings which are not functional," he says. "When you work in a team. At that time



**On the 2012 European GP podium with the three drivers he worked with at Ferrari: Räikkönen, Alonso and Schumacher**



Fiorano. It was the V10 at the time. Very loud. And I heard this sound, and I thought, you know what, I think it's 51 now in F1's favour, I need to take it."

Stella earned his PhD in Mechanical Engineering with an experimental study on the fluid dynamics of flames in 2000 and joined Ferrari immediately afterwards, accepting the position of test team performance engineer. Back then F1 squads still had entire departments just for testing, and Stella ended up working closely with Michael Schumacher – at the very start of Michael's most successful period at Ferrari.

It was a dream opportunity, and a dream job.

"I think I accepted the role because it was as a performance engineer," he says. "It gives you the possibility to look at the car quite holistically. And ultimately, you deal with performance, influence the performance of the car while

**Now the team principal, Stella initially moved from Ferrari to McLaren to become head of race operations**

on track. So you have the double thing of understanding the car as a whole rather than in a specialist sectorial way, which is very attractive, and in addition to that you really understand the performance numbers. And you also understand the performance element associated with the interaction with the driver.

"To be honest, I think performance engineer in F1 is the best job in terms of... it's just beautiful!"

On top of that, Stella was in the right place at the right time, with a genuine constellation of talent in place at Ferrari.

Then-Ferrari team principal Jean Todt would go on to have a lengthy tenure as FIA president,



[at Ferrari], it was possible to get rid of that, focus on your professional commitment. So [in such an environment] you get more out of yourself in the first place. And in the second place, you can collaborate very effectively with people from whom you can learn. And you can learn because sometimes they know more than you, or you can learn because of the collaboration that you instigate and which normally leads to a process of increasing know-how and expertise. But this also requires the cultural foundation.”

So it's no exaggeration to say Stella had no shortage of role models to learn from at Ferrari. Including Schumacher. Michael was very much part of the decision to transfer the young engineer into the race team – and right away to Schumacher's side of the garage.

“I think it must have been a combination of what Michael had observed, but also what the management might have observed,” Stella says. “You need to be convinced on both ends to, you know, set the foundation in terms of supporting a driver like Michael for the years to come.

“It was certainly a challenge for me, pretty much a rookie engineer in a race team, picking

**“SCHUMACHER SAID TO ME, ‘I WANT YOU HERE, WE’LL LEARN TOGETHER, I’LL BE IN THE CAR DRIVING, YOU’LL BE IN THE CAR WITH ME, BUT THROUGH THE DATA, AND THROUGH THE INFORMATION, AND WE’LL MAKE IT WORK’. THESE WORDS I’LL NEVER FORGET”**

up the role of performance engineer with the best driver, who is well-known to be not only very demanding, but also very accurate and very knowledgeable. So it was like, ‘Am I really going to be useful to this guy?’

“But I also remember well, when Michael spoke to me, he had a clear plan. You could see the leadership of this unbelievable person. You know, he was like, ‘Don’t worry, I want you here, we’ll learn together, I’ll be in the car driving, you’ll be in the car with me, but through the data,

and through the information, and we’ll make it work’. These words I’ll never forget. And the situation itself I’ll never forget.

“Michael is an incredible team builder. Not only a team member, but a team *builder*, he’s the driver that created or contributed massively to create his own success at Ferrari. Because when he joined Ferrari, they were nowhere near ready to win. And year after year, they went closer and closer and closer to winning by building. So it’s not a driver who jumped in a quick car and was ▶



PICTURES: STEVEN TEE; MOTORSPORT IMAGES ARCHIVE



successful. He contributed to build the car that he drove to success. And my experience is simply an example of how it happened.”

As performance engineer in the race team, Andrea worked with three Ferrari drivers. After Schumacher came Kimi Räikkönen, who remains the driver to have brought Ferrari its last F1 title for now and with whom Stella switched to the race engineer position, and Fernando Alonso. The latter never did win a championship with Ferrari, though he came close twice. Nonetheless, it’s Fernando who served as catalyst for the next twist in Andrea’s career.

When Alonso moved to McLaren in 2015, Stella followed. Not so much to deliberately accompany Alonso, but just move in the same direction, wanting a new opportunity to make use of the experience he’d amassed.

“I wouldn’t say that Fernando’s move was the motivation, Fernando’s move was more of an opportunity,” explains Stella. “My move to McLaren happened because from a professional point of view, and a personal point of view, I thought that I wanted to expand, capitalise on what I’d learned so far, in a different way. I felt like I wanted a new experience, also looking at how you work in a different team. I felt it was the right time to move. And I left behind me phenomenal, beautiful memories of my

**With Alonso in 2014 (below). Although both moved to McLaren for 2015, Stella admits he was after a new challenge with a new team**

**“THEY ASKED ME IF I WAS AVAILABLE TO TAKE UP THIS ROLE. AND I THOUGHT IT WAS VERY INTERESTING. ULTIMATELY, PERFORMANCE IS WHAT I STARTED WITH IN FORMULA 1 AND IT’S STILL THE THING I ENJOY THE MOST”**

experience at Ferrari, and I’m very grateful to Ferrari, that I had this opportunity.”

Stella joined McLaren at the beginning of 2015 as head of race operations, and at a time of great tumult. Honda’s struggles to find performance and reliability unfolded in parallel



with a hidden problem – the team itself had lost its way in technical development but was unable or unwilling to recognise this, a mentality made possible by the engine issues. The ramifications would lead to change all the way to the top, with Zak Brown taking over from Ron Dennis.

Stella not only survived the turbulent era, but rose rapidly through the ranks – though he insists this was never a goal he’d set himself.

“Well, that’s not the way I think,” he says. “The way I think is... I do my job. I focus on it. It’s always been, if you want, professional opportunities coming to me, rather than me [chasing them]. Apart from the move from Ferrari to McLaren, I kind of have never asked, ‘I would like to do this’ – it’s always been, ‘Andrea, we would need this. Are you available?’

“Obviously, you want to have awareness of your present, you want to have awareness of what’s your past and the experience you’ve built. But my focus is always to just do a good job at what I’m doing. Everyone has aspirations. But for me, *career* has never been anything that attracts me. It’s not an aspiration for me.”

Stella first took up the performance director role in 2018, then ascended to racing director in 2019 under new team principal Andreas Seidl.

“In ’18, McLaren thought they needed to add a more organic approach to performance,” he explains. “There was a need to have a simple but clear assessment in terms of where we are from a performance point of view, and what’s needed to make steps forward. So the team decided that assigning the whole performance topic to a single person will be a good way of putting performance in order and set the foundation into the future. So then they asked me if I was available to take up this role. And I thought it was very interesting. Ultimately, performance is what I started with in Formula 1 and it’s still the thing I enjoy the most.

“Then, after Andreas and James Key joined the team, we thought we could move towards a very simple organisation, in which there are three fundamental functions: technical, manufacturing, and racing. One designs the car, one produces the



PICTURES: SIMON GALLOWAY; MOTORSPORT IMAGES ARCHIVE





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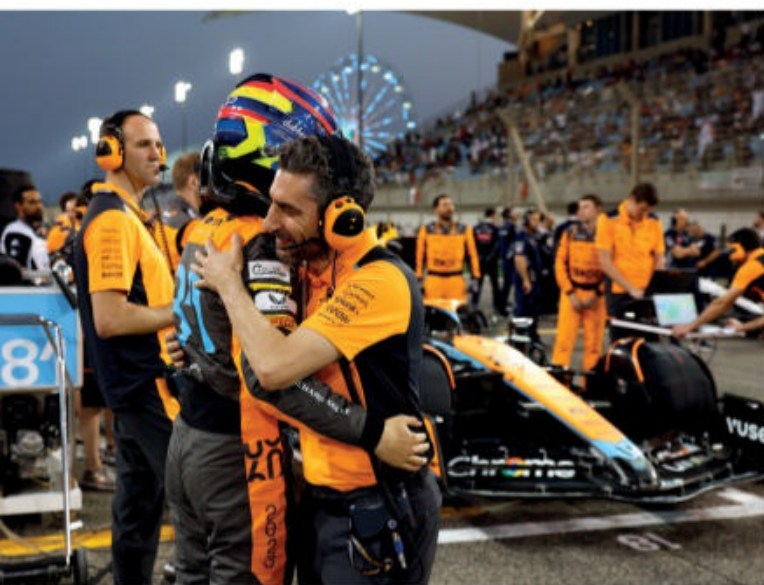
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car, one takes the car racing. And I was more than happy to pass part of my remit into technical and just take care of racing in the interest of having a simple and effective organisation.”

This winter, “Andrea, we need this. Are you available?” rang out yet again. Seidl’s departure from Woking created a vacancy Zak Brown wished to fill with an experienced insider.

“You know, my perspective into the winter was... it’s been a tough season, many races, I was looking forward to step back a little bit,” Stella recalls. “In racing, we have very strong leaders.



**Stella with McLaren new boy Oscar Piastri ahead of the first race in Bahrain. Both have a big job on their hands this season**

We’ve worked together for a few years now, and I know I can step back for one week, and these leaders will carry on pushing. So, that was my setup towards winter: to back off, just a little bit.

“But then there was a call, or actually a WhatsApp message from Zak: ‘Andrea, do you have five minutes?’ On a Saturday morning. ‘Hm, that’s not right.’ He needed some reflections from my side. Ultimately, these reflections led me to think I should accept the proposal and just get all in on this. Like I said before, what’s important for me is what you do. I don’t worry about anything else.”

The task won’t be easy. McLaren finished fifth last year, performing clearly below its own expectations. Now the beginning of this season has proved disappointing, the car has obvious flaws, and technical director Key has gone in favour of a new management structure which Stella helped devise. As with Ferrari’s return to greatness in the late 1990s, change and improvement are likely to be gradual and will take place under a high degree of pressure and critical scrutiny. Even if Andrea refuses to describe his first few months in the job as

**“WE IDENTIFY THE SOLUTION, AND WE WORK ON IT. THAT’S MY MINDSET. THAT’S MY APPROACH. AND SO FAR I WOULD SAY IT’S BEEN INTERESTING, INTENSE, AND, TO SOME EXTENT, ENJOYABLE – BECAUSE WHEN I DEAL WITH CHASING PERFORMANCE, I ENJOY IT”**




PICTURES: STEVEN TEE; ANDY HONE

“stressful”, they’ve certainly proved busy.

“There’s no point in being stressed,” he smiles. “You just degrade your performance. If you want to work in F1, you need to live with it in a functional way. There’s no point in being stressed and just underperform, day after day. You just have to accept that there will be long hours, there will be situations that aren’t ideal. Also that while you have the aspiration and the whole team at McLaren have the aspiration in the future, to go to race weekends and fight for

victories, at the moment that’s not what we’re at.

“But we accept it and analyse it. We identify the solution, and we work on it. So that’s my mindset. That’s my approach. And so far I would say it’s been interesting, intense, and, to some extent, enjoyable – because when I deal with chasing performance, I enjoy it.”

It’s not going to be easy, but one thing’s for sure – having had the experience of being part of one of the most dominant teams in F1 history, Stella knows what the view looks like at the top. 





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# BURN





# OUT

Formula 1 has an ambition to run more than 25 grands prix a year. The business case is compelling – but it comes with a human cost which doesn't show up on the balance sheet. And the teams are going to have to live with it. But how do they plan to achieve that?

WORDS MARK GALLAGHER

PICTURES  **motorsport**  
IMAGES



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**HEN BERNIE ECCLESTONE** sat down for dinner with Liberty Media's Chase Carey and Sean Bratches at the 2016 Monaco Grand Prix, they enjoyed a wide-ranging talk with host Donald Mackenzie, head of CVC Capital, at that time the ultimate owner of Formula 1.

In Manish Pandey's documentary *Lucky!*, chronicling the life and times of the man who built the business of F1, Ecclestone reflects upon that pivotal meeting on Mackenzie's yacht.

"Business wasn't discussed there at all," he recalls. "I think what they really thought in the end, the bottom line, was simple. 'Here we've got an 80-year-old guy that's been running this company for 40 years. Imagine us, proper American business people, if we had the company what we could do'."

What Liberty could do was take everything Ecclestone had already established and grow it further. When it subsequently secured the takeover, a key element of its growth strategy was to have more races.

It is the most straightforward way to grow revenue from promoters, broadcasters, sponsors, merchandise and corporate hospitality sales. It translates into greater profitability, the *sine qua non* for a publicly listed company focused on driving shareholder value.

Put simply, more races is good for business. But at what cost, particularly to the women and men who have to put on the show no fewer than 23 times this season?

It should have been 24, of course, but China was cancelled owing to ongoing Covid restrictions. This has left race team personnel to face a season which includes six double and two triple-headers, the last of which requires them to race in Austin, Mexico City and São Paulo on successive weekends.

"In 2023 our biggest fight is not on the track, it's not in the pitlane, it's not on the grid, it's not in the paddock," says Peter Crolla, team manager at Haas. "The biggest thing we're up against is a 23-race calendar that jumps across continents and time zones. The human attrition impact of that is massive."

For travelling team members this translates into far more than 23 weekends.

"A race weekend for us, from absolute start to absolute finish, is 10 days," continues Crolla. "So much of what goes on in the background to create that race spectacle is never seen. When we



**Setting up and packing away means that for teams a single race weekend can last up to 10 days from start to finish**

break into a garage there's a three-day lifecycle of actually getting this thing into a working condition. Then again, it's a day and a half to take it all down at the end, so that little bit that [fans] see from Friday morning through to Sunday evening is just a small percentage."

The prospect of spending up to 24 weeks, six months of the year, between airports, hotels and racetracks is not for everyone. The Formula 1 season has fast become like a military tour of duty. One which appeals to younger staff with fewer commitments to partners, children and family back home.

"When people get to a certain age, they start having families and children, you can't be away for 180 to 200 days a year and have that family life," says Crolla.

"We're seeing the average age of garage-based staff probably go from people in their 30s, 10 or 15 years ago, now edging down into the 20s. We're going younger and younger in the people that we're bringing into the company, because those are the people that have the, let's call it, social availability."



**MORE POPULARITY  
MEANS MORE WORK**

Against a background of massive audience growth – the much-lauded 'Netflix effect' – for the drivers the increased schedule means more demands, from media, sponsors and F1 itself.



PICTURES: LIONEL NG; ANDY HONE; ALFA ROMEO





“IN 2023 OUR BIGGEST FIGHT IS NOT ON THE TRACK, IT’S NOT IN THE PITLANE, IT’S NOT ON THE GRID, IT’S NOT IN THE PADDOCK. THE BIGGEST THING WE’RE UP AGAINST IS A 23-RACE CALENDAR THAT JUMPS ACROSS CONTINENTS AND TIME ZONES” **PETER CROLLA**

The result is a growth in the number of marketing personnel needed to support them and also to manage their schedules.

There has been a development which will be greeted with horror by those who measure their personal worth in terms of unbroken grand prix attendance. Going to all the races no longer holds the cachet it once did. Increasingly, it’s now an indication of stature when a team member,

race official or even broadcaster can elect which races to attend, which to skip.

“We’re starting to implement a fairly light rota on performance engineering,” confirms Crolla. “We’ve got a race team support group back in the factory, whereby if people need some time off for births, deaths and marriages, we’ve got people that can step into the breach for mechanics’ and garage technician roles.

“But there are certain roles in the organisation there isn’t a backstop for – team principal, team manager, team coordinator – that we don’t have multiples of. Those people are not irreplaceable, but quite critical.”

For the majority of travelling personnel, skipping races is neither desired nor an option. They want to be there, it’s a lifetime’s ambition realised, a privilege they enjoy bearing in mind



Staff, especially at races, are now younger than they were 10 or 15 years ago as they have fewer family commitments

that, for larger teams, travelling personnel are less than 10% of the workforce. Most employees work at the factory.

It’s a slightly different story at Haas, however, which has only 240 staff spread across its sites in the USA, UK and Italy.

“We’ve got anywhere between 90 and 110 staff at every race, depending on how busy we’re going to be and where it is,” says Crolla. “The hardest thing is keeping everybody standing upright, doing their job properly, and just able to function as a human being.”



## A GLOBAL TRAVELLER’S SURVIVAL GUIDE

Staff wellbeing has never been more important as the rigours of frequent travel, disrupted sleep patterns and eating on the go take their toll.

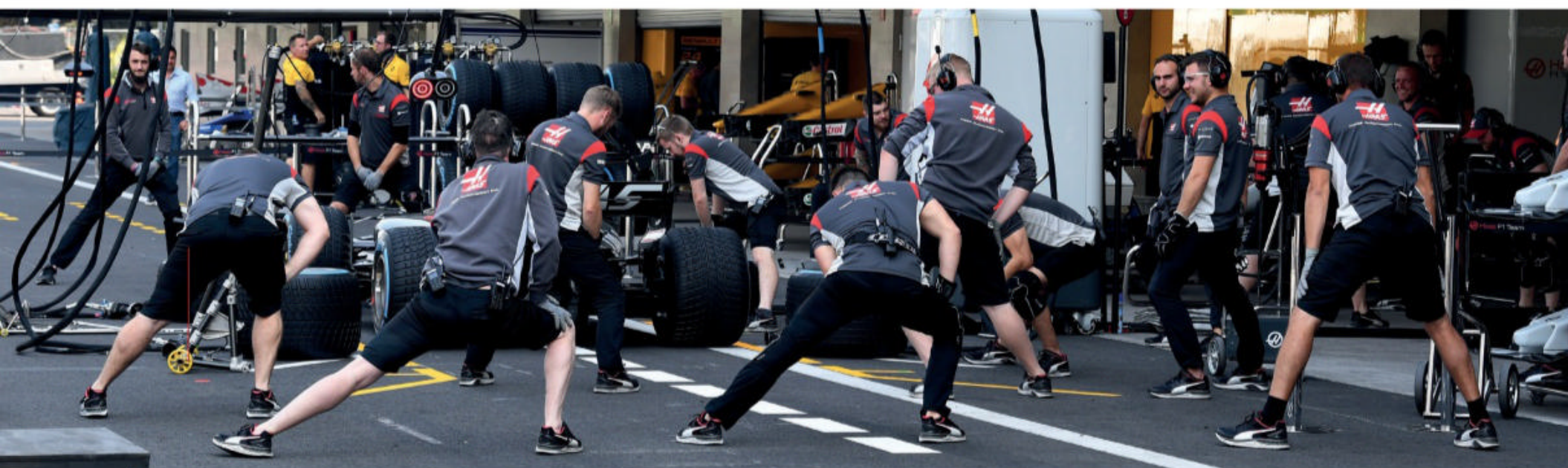
“Health and wellbeing is very important to help ►



the team get through the long calendar,” says Ron Meadows, Mercedes’ hugely experienced sporting director. “We become a family who support each other. We also have people based at Brackley [Mercedes’ HQ] that are dedicated to our health and wellbeing.”

One is Chris Armstrong, Mercedes’ wellbeing programme manager.

“When we talk about wellbeing, we talk about three main elements; physical, mental and recovery,” says Armstrong. “From a physical



PICTURES: MOTORSPORT IMAGES ARCHIVE

**Physical wellbeing has been a high priority for teams for a number of years, but mental health is now crucial as well**

standpoint we want to make sure team members are physically active, both in the workplace and at home. From a mental standpoint we want to make sure that all team members are happy, but also able to focus.”

The recovery element comes down to workload, ensuring team members get sufficient rest and the equally important aspect of overseeing what they’re eating and drinking.

“They’re working from the minute curfew lifts to the minute it restarts,” says Crolla. “It’s often a battle for them to eat and keep hydrated. They need those to function properly, stay focused and do the best job they can.”

This also means striking a balance in terms of when personnel travel to an event, and the days they have off. An extra day to acclimatise to a major time zone change can be worthwhile, but that also means a day fewer at home with family.

At Haas the team’s health and wellbeing support is provided by performance physiotherapist Faith Attack-Martin, Dan Martin, head of performance coaching and sports science – whose responsibilities include nutrition and diet – and Andy Wolfenden, a strength and conditioning coach.

Within her role, Attack-Martin arranges social

outings for the team. In Melbourne she arranged for the team to attend an Australian rules football match. She also coordinates track runs.

Haas has launched an initiative whereby the team is planning to run the equivalent of the distance between its Banbury base and Abu Dhabi’s Yas Marina circuit. For each kilometre a member of staff runs the team contributes funding to charities related to two team members who sadly succumbed to cancer, Harvey Cook and Jennifer Harman.

The advent of hybrid working, which existed prior to the Covid pandemic but has now become more mainstream, is proving helpful to staff who travel to races but can work from home when back with the family. Crolla personally finds this to have been a positive change.

Remotely based staff are also playing an increased role in supporting travelling teams, and not only in making race strategy calls.

“We support the track with people who can help analysing information, gathering extra information but without the focus being on the car itself; from an aero perspective, tyre perspective, setup perspective or strategy,” says Dominique Riefstahl, Mercedes’ race support team leader and test engineer.

“The positives of using the RSR (Race Support Room) is efficiency,” he adds. “Running the entire RSR is cheaper than sending one person trackside for a year. We also have the advantage that we’re connected live to the track. We also get to go home and see our families every night and we’re not bound by curfews, so we can offset our hours and make sure we make best use of the time.”

The advent of curfews has unquestionably helped teams ensure travelling staff get sufficient ‘down time’, the opportunity to grab a decent meal and a proper sleep. It is far removed from the era when F1 mechanics all too often pulled ▶

“THEY’RE WORKING FROM THE MINUTE CURFEW LIFTS TO THE MINUTE IT RESTARTS, IT’S OFTEN A BATTLE FOR THEM TO EAT AND KEEP HYDRATED”

PETER CROLLA



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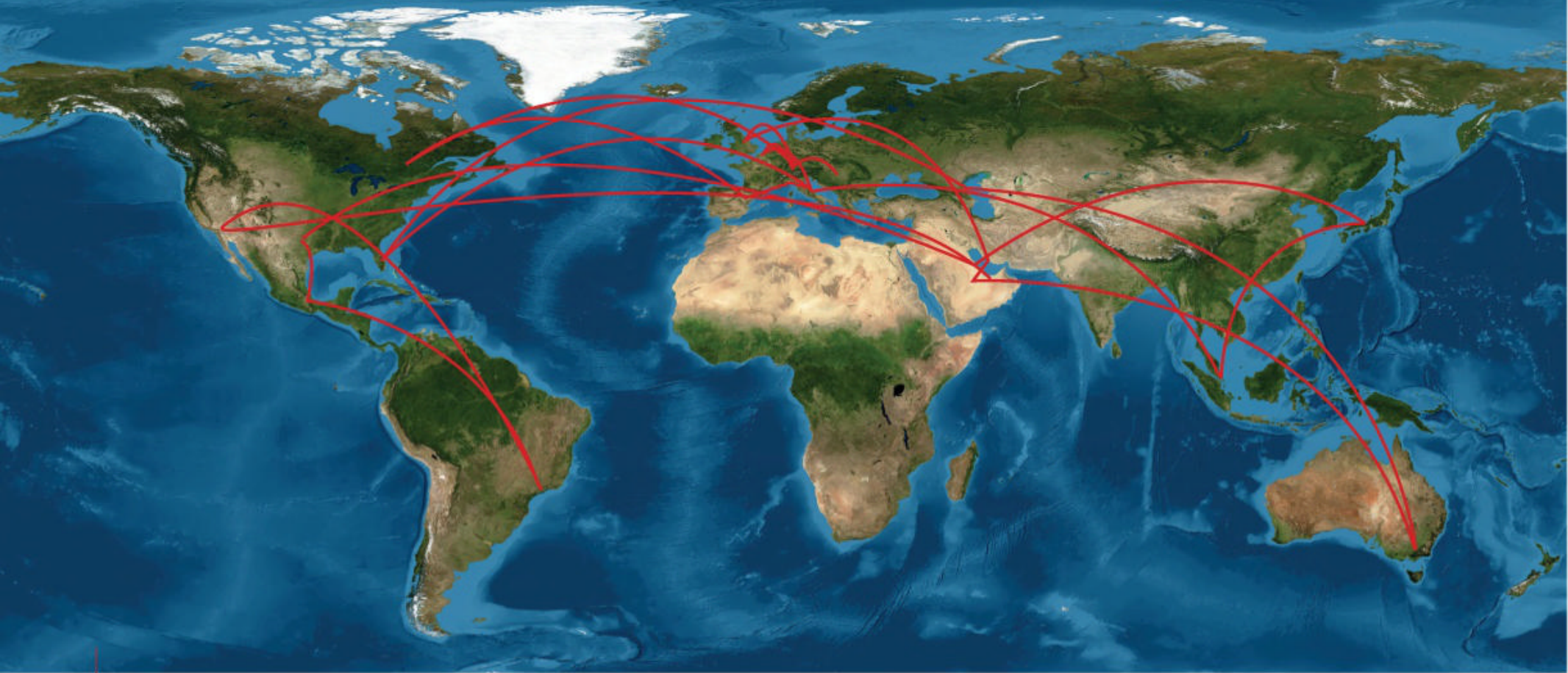
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PICTURES: SHUTTERSTOCK

**Travelling personnel need to commit to a schedule that will see them criss-cross the world with long periods away from home**

all-nighters, then emptied the minibar in a quest to switch off.

The curfews on a Wednesday and Thursday night are followed by a requirement to have the covers on the cars three hours after second practice, effectively a hard-stop. Similarly, on Saturday, teams must have both the covers and FIA seals on the cars two hours after qualifying.

“People can then tidy their work areas, start thinking about what they’re packing up for Sunday night, because the car’s now in the condition that it’s going to race in,” says Crolla. “They can just try and make their life a little easier on Sunday by spending a bit of time preparing on a Saturday night, plus it gives the guys the opportunity to go out, have a meal, see some friends, relax and socialise a little.”

Ultimately travelling personnel have to fully commit to a demanding, non-negotiable schedule, the double-headers requiring some staff to be away from home for 17-18 days at a time, the triple-headers more than three weeks on the road.



## THE COST OF LIVING GLAMOROUSLY

While Instagram may showcase drivers and team principals flying by private jet, then helicoptering from airport to track, the reality for team personnel is more prosaic. It’s economy class and a shared room for most, business class and a single room for senior staff and engineers who have to return to base, then work, between races.

“An economy travel, shared-room occupant costs us about £45k a year while a business [class] single-room occupier is more than double that,” says Crolla. In a post-Covid environment in which long-haul economy and business class tickets are costing teams as much as 50% more than in 2019, these costs are significant, but the reality is that

“YOU CAN’T GO BEYOND 24 RACES WITHOUT REALLY PUSHING HUMAN ATTRITION TO THE LIMIT AND BEYOND” **PETER CROLLA**



more races and increased revenue also means a bigger prize fund. Every team benefits.

In 2021 the teams shared USD\$1.068bn, while last season that increased to USD\$1.157bn with a further increase predicted this year.

F1’s CEO Stefano Domenicali has confirmed there is sufficient interest to drive the calendar up to an eye-watering 30 races. Teams are already beginning to consider what heading beyond 25 grands prix will mean for their travelling staff.

Crolla is certain it will require a major change in the way F1 operates.


“It’s not necessarily the number of races, it’s the time away, and how that interacts with personal and family life. That would require massive, wholesale change to the sport, not just in terms of how a race weekend is structured, because you’re then breaching into more months of the year, but

**For most team personnel it’s economy class wherever they go, and sharing a room. Even that can cost £45,000 a year**

how would the teams actually operate.

“You can’t go beyond 24 races without really pushing human attrition to the limit and beyond. To go to a number starting with a three you’re going to need two teams, and that’s going to need an overhaul of all the financial regulations.”

With 24 races already set for next season, Malaysia eyeing a return, Liberty keen on South Africa and countries such as Germany and France oddly absent, further growth seems certain.

The teams will have to cope. Inevitably they will invest further in staff wellbeing, then reach further into the pipeline of youthful talent eager to work in Formula 1. 





## **ventus S1 evo<sup>3</sup> SUV**

Powerful grip and superior handling  
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OFFICIAL  
PARTNER







KEVIN MAGNUSSEN

# 10 THINGS I LOVE



Family, flying and simpler pursuits away from the high-pressure world of Formula 1 make K-Mag's life a joy

## Parenting

Family is the biggest thing in my life. Being a parent has become the foundation, and given meaning to everything. Meaning that I didn't have before.



PICTURES: ANDREW FERRARO; SHUTTERSTOCK

## Flying

I'm training to be a pilot at the moment, taking lessons for my private pilot's license. So, that's one of my hobbies, if you want. That's something I really enjoy. I'm struggling to get it done,



though, because of the schedule, but I'm in the process. Actually, my next lesson is my first solo. I guess that's something that I picked up from my grandad. He is a glider pilot. Or "was", as he's too old for that now. But yeah, I was always a fan of planes and found flying fascinating

## Trekking

I like the serenity of being in nature, camping with a bonfire, cooking dinner. Trekking, setting up a camp and chilling out, fishing – it completely takes me away from the rush of everyday life. It came about in the last few years. I guess in the past, I was... too busy, and just wanted action. But with age and after ten years of F1, it's now become a bit of a need. A need to come out of this busy space of mind and switch off. That's something I want to do more of when I get time, some longer treks. The same goes for sailing. It's more active in a way because you're steering a boat and all that: you're kind of focused on sailing and trimming and navigating, and it takes your mind off everything.





Danish rock music

I'm a big fan of Danish rock music from the 1980s or '90s. Disneyland After Dark [now just called D-A-D], Dizzy Mizz Lizzy. If you're into rock music, you'll love those.



Dogs

I absolutely love my dog, Elsa. She's an English Staffordshire Bull Terrier. Small, muscly. They look so strong, and maybe to some people they even look aggressive, but they're the most sweet and loving dogs in the world. She actually lives with my mum now. When I got back into F1, and we started traveling so much, I had my mum look after her when we were away, me and my wife together. And eventually, my mum just said, "You're not getting her back!"



Science and the universe

I'm fascinated by space. I read about it, I listen to podcasts about it, I watch documentaries – that's some of the things I do when I'm flying long flights, always getting into these rabbit holes. And I do often find myself thinking about the universe, about the infinity of the universe, about the structure of the universe, and the meaning of it, after all. So, all those existential thoughts...



Curry

That's my favourite food! But it has to be from one of those dodgy curry houses in the north of England...



Working with my hands

I have this idea that when I'm done racing, I'm going to be a carpenter. I like building stuff. I like working, constructing, I like using my hands. It just gives me pleasure.



Old-school tracks

I tend to like the older tracks. I really enjoyed British F3, because you go to tracks like Oulton Park, Brands Hatch, Snetterton. Well, maybe Snetterton not so much... I did the IMSA season in 2021 and there are some great tracks in the US. Watkins Glen, Detroit. If I have to pick one favourite it's going to be the old Detroit street track. They'll have a new track this year, but the old one is great.



Denmark

There's no place I'd rather be than at home. I like home, Denmark. But that's probably because of the life I'm living. I think when I'm not racing and travelling, then I'll feel a hunger to see more of this planet. But it's more the nature in the world I want to see. I don't like cities, the rush of big cities, or the sounds and smells. I like going out in nature, and I'd love to experience different parts of the world.



NOW  
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WAS  
A  
CAR

No. 118

WORDS  
STUART COOLING  
PICTURES  
JAMES MANN

# BRM





# P139

The unlikely winner in  
BRM's ground-effect battle





**“W**e are out to get the 1969 Formula 1 world championship. We want to extract more power from our V12 engine and to achieve our success this year. In 1962 I challenged BRM to the effect that if they didn’t win the championship, we should drop it altogether. I have not made

quite the same challenge this year but the same feeling exists...”

With this peculiar mixture of clarity and equivocation Sir Alfred Owen outlined his aspirations for the coming season. The venue for the BRM launch, Shell Mex House, an imposing riverside art deco edifice boasting the largest clock face in Britain, was suitably prominent for an occasion high on patriotic bombast. BRM had always seen itself as the British Ferrari but its trophy cupboard attested to a history more dense with competitive troughs than peaks. Many present thought Sir Alfred, the wealthy industrialist whose group of companies had underwritten BRM since 1952, was only fooling himself. Indeed, Shell sponsored the ‘real’ Ferrari, not BRM.

There was also not a great deal in the way of new developments to be announced. It was already known 1964 champion John Surtees would be joining the team from Honda’s moribund F1 programme, racing alongside Jackie Oliver, fresh out of Lotus. Richard Attwood had been let go before the end of the 1968 season in favour of USAC racer Bobby Unser, who walked away after one race. Pedro Rodríguez had been shuffled over to BRM’s satellite team, Reg Parnell Racing. Of a new car there was no tangible sign.

Behind the scenes BRM was, as usual, in disarray, and the purse strings were being drawn tighter as the decline of the British motoring industry exercised a trickle-down effect on the other companies in the Rubery Owen group. The introduction of the opinionated and uncompromising Surtees into a factional world already adequately populated by strong characters would have explosive effects.

Central to the melodrama would be the car itself. Since the beginning of 1968 BRM had been relying on iterations of a chassis whose design and initial manufacture had been outsourced to former Lotus and All American Racers engineer



## THE EARLY PART OF THE SEASON OFFERED NO FURTHER SUCCOUR FOR THE INCREASINGLY DISGRUNTLED SURTEES

Len Terry’s Transatlantic Automotive Consultants. Why did BRM, which did not want for engineering resources, take the subcontractor route? A wholly accurate conclusion is difficult to reach given the number of differing accounts, but the common denominator in these is the troubled 3-litre H16 engine and the energy expended in trying to troubleshoot it.

By 1968 BRM had supposedly abandoned the heavy and unreliable H16 in favour of a V12 originally designed by Geoff





Johnson for sportscar racing. The V12 was also heavier and thirstier than Cosworth's genre-defining DFV V8, and not especially reliable, but it had shown encouraging signs in Bruce McLaren's M5A in late '67 – and works BRM driver Jackie Stewart had lobbied for it to be used in the team's Tasman campaign that winter before he departed to join Ken Tyrrell's Matra outfit. But BRM chief engineer Tony Rudd, the instigator of the H16, remained convinced of his engine's potential.

Like many gifted engineers before and since, Rudd had developed a blind spot for his pet project's shortcomings and continued to labour in vain on a reboot of the concept with a lighter block and multivalve heads through '68, seeing Terry's V12-engined P126 as a stopgap. When the lightened H16 was finally 'ready' the dyno revealed it to be scarcely more powerful than the original – and it still, as Stewart had pointed out, "needed as much fuel, water and oil as the Queen Mary."

During 1968 BRM built its own version of the P126 chassis, varying only in detail and badged P133, before introducing the P138, which was different chiefly in having a BRM-built gearbox in place of a bought-in Hewland transmission. The first car was introduced at the '68 Italian GP for Rodríguez, who retired, then raced at Watkins Glen by Unser, who also retired; it was then, after a winter lay-off, presented to Surtees, who was unimpressed – despite the promise of a new 48-valve

BRM P139

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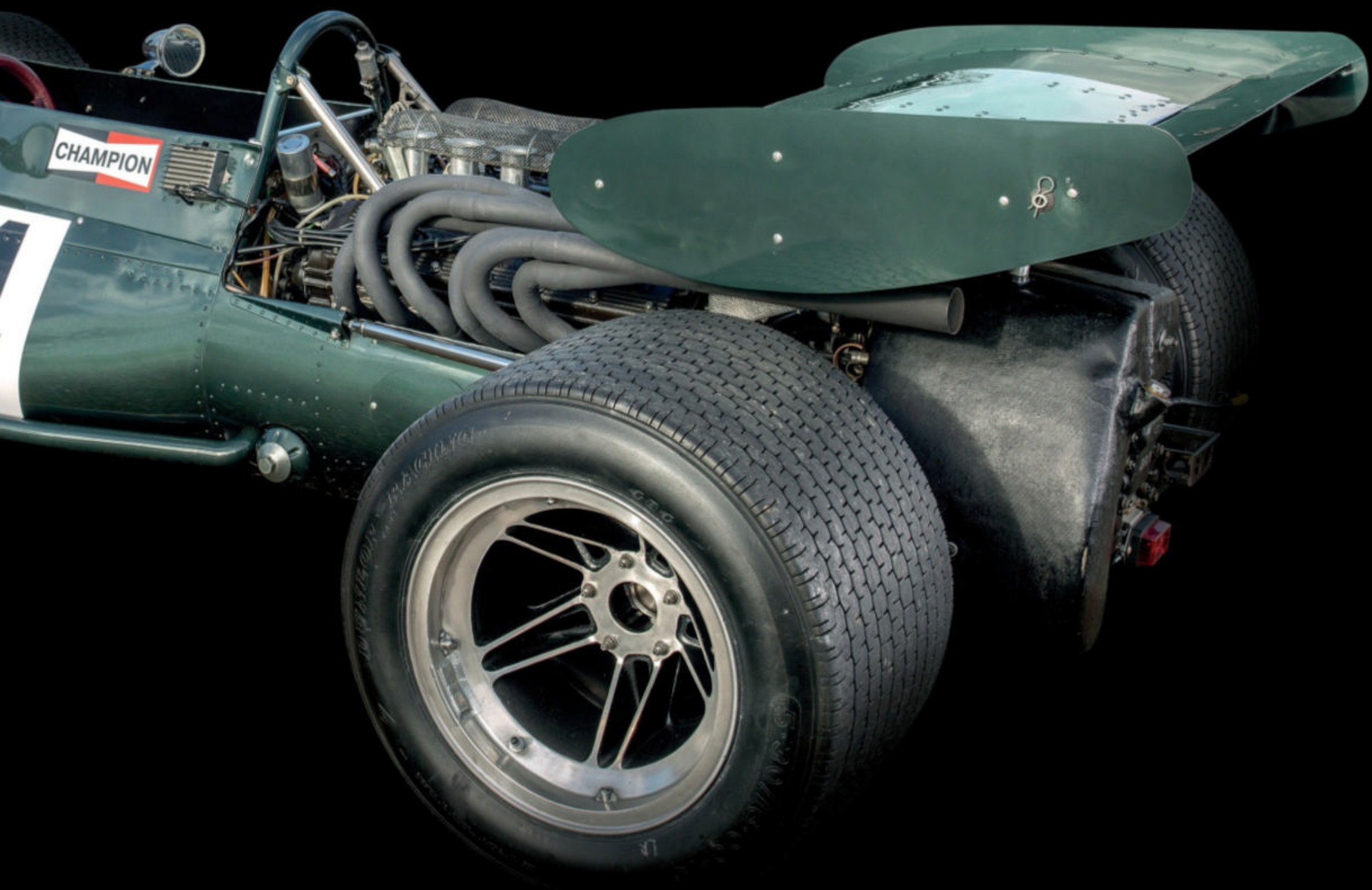
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iteration of the V12 claimed to be good for over 400bhp.

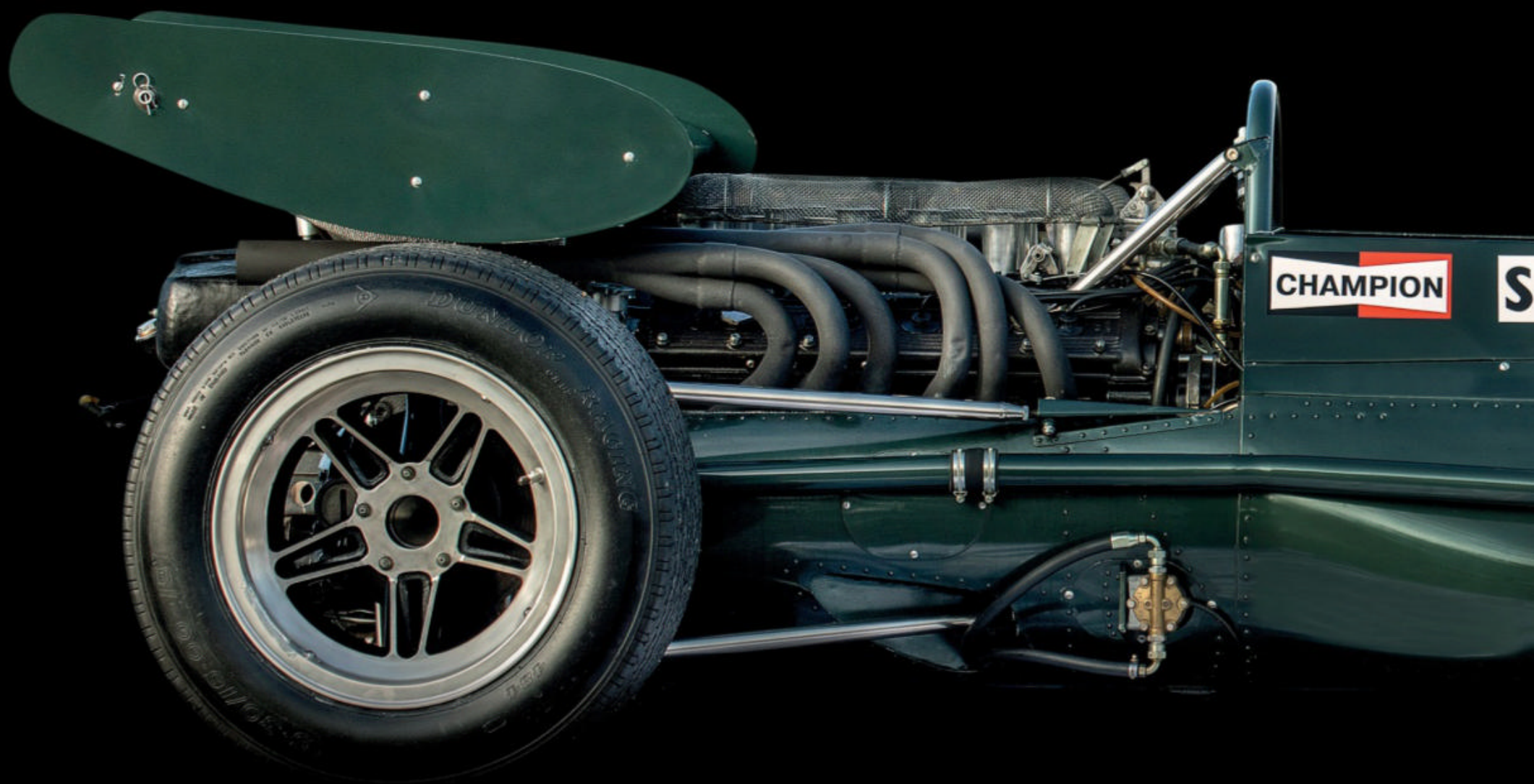
Having failed to recognise the H16 concept as a bust, Rudd further denuded his internal political capital with BRM's chiefs by not working well with Surtees. "Il Grande John" wanted a new car; what he would get was the P139, a heavily revised (by chief designer Alec Osborn) version of the existing concept with the fuel tanks and ancillaries relocated to improve its balance.

Surtees was given sole use of the two P138 chassis for the season opener in Kyalami while Oliver made do with a P133, but the only race-ready 48-valve V12 developed a problem during practice so Surtees swapped to a spare chassis with an older-spec engine. No one thought to notify the officials, so his times were struck off and he was forced to start from the back. To compound a weekend which had begun with both cars immobilised by electrical issues caused by botched preparation at the factory, both works cars succumbed to engine issues. Surtees was already a lap down when he halted on lap 40.

The early part of the season offered no further succour for the increasingly disgruntled Surtees. A crash caused by a puncture during practice for the Race of Champions at Brands Hatch wrote off the newer P138 chassis and damaged the 48-valve engine. He was fifth in a Spanish Grand Prix blighted by high-speed accidents caused by failures of the high-mounted wings being sported by the new generation of cars, but this was ▶







by no means a success: he was the last car running, six laps down on the winner. Oliver's car had a split oil line which was only detected when a mechanic saw the pool of oil on the grid. In Monaco, where the high wings were banned, Surtees was eliminated when his gearbox failed and an unsighted Jack Brabham crashed into him.

As Surtees agitated for change, Rudd had something else in mind. The ban on high wings had been clumsily implemented and the provisions for where and how lower wings could be mounted, or how large they could be, were unclear and the subject of frequent revision by the FIA. The young engineer and aerodynamicist Peter Wright, later to pioneer ground-effect aerodynamics at Lotus, received a ground-breaking mandate as he would later recall: "Tony said, 'I hate these wings, go and figure out how to make the body produce the downforce.' That was the clear objective he set. I started ferreting about and designed a 'wing car.'"

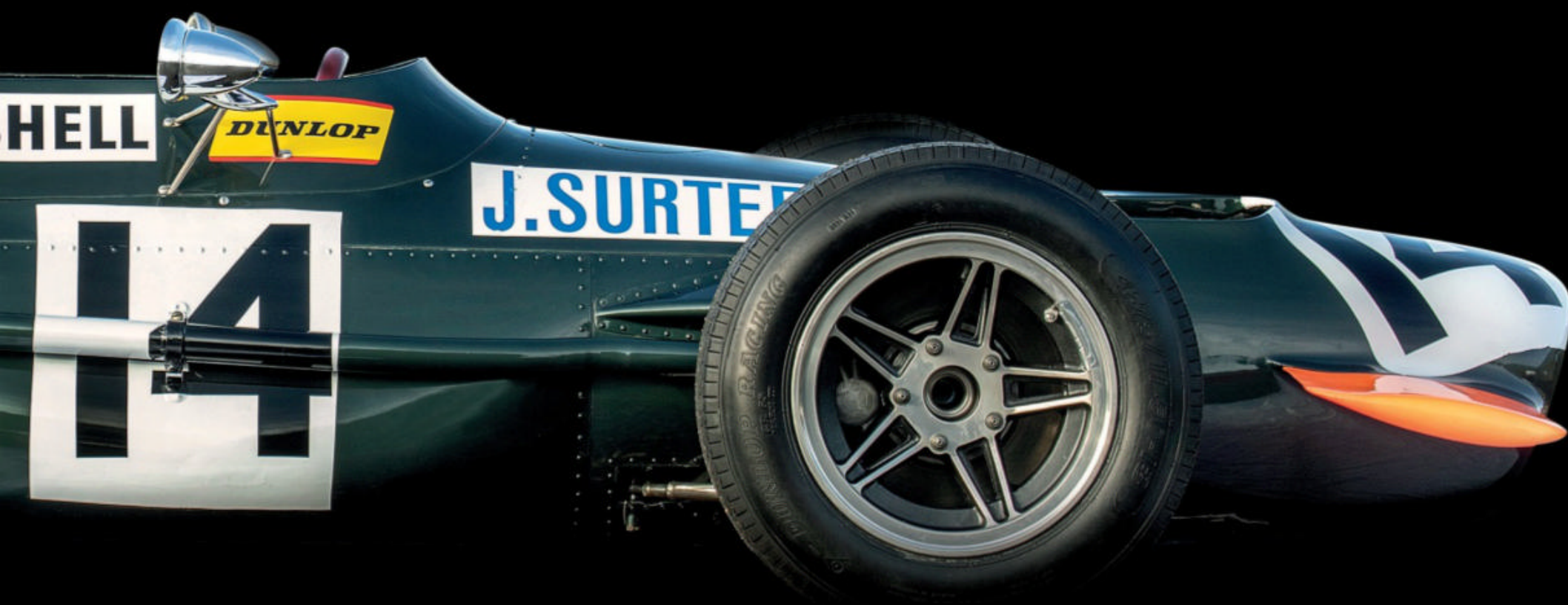
Work on the P139 dragged as resources were diverted towards Wright's secret project. As Rudd would divulge in his autobiography *It Was Fun*, he became so enthused by the results of Wright's research in Imperial College's windtunnel that he cancelled the build of the second P139 chassis in order to focus on the development – in secret – of the 'wing car' at BRM's facility in Bourne. It's claimed Surtees only got wind of the project when he arrived at the factory for his seat fitting and wondered where all the engineers had got to...

There was a long break between Monaco and Holland owing to the cancellation of the Belgian GP, and at Zandvoort in late June BRM unveiled the P139 in public for the first time. By this point the team was claiming the V12 produced 450bhp, a figure greeted with great scepticism by contemporary reporters.

The key feature was a slimmer monocoque, though BRM maintained Terry's wrap-around structure rather than adopting a 'bathtub'-type open design as used by the likes







## WORK ON THE P139 DRAGGED AS RESOURCES WERE DIVERTED TO WRIGHT'S SECRET PROJECT

of McLaren. The bodywork was tightly waisted at the rear, between the wheels, though any aerodynamic gains here were offset by the presence of oil coolers on each side. While the theory behind the slimmer structure was to reduce the frontal area and achieve higher speeds, the V12 was thirstier than Ford's DFV and required larger fuel tanks than its rivals. The addition of pannier-type tanks around the P139's waist negated the gains found through redesigning the monocoque. There were hidden problems, too, with the suspension geometry and strength which would only become apparent later.

Surtees tried the P139 in practice, found its twitchy handling not to his liking, and reverted to the P138 for the race. He and Oliver (still driving a P133) were the slowest of the works entries and the tensions at Bourne became obvious to all when Surtees – already three laps down – had to make a splash-and-dash stop on the final lap of the race, during which there was a heated exchange of views in the BRM 'box'.

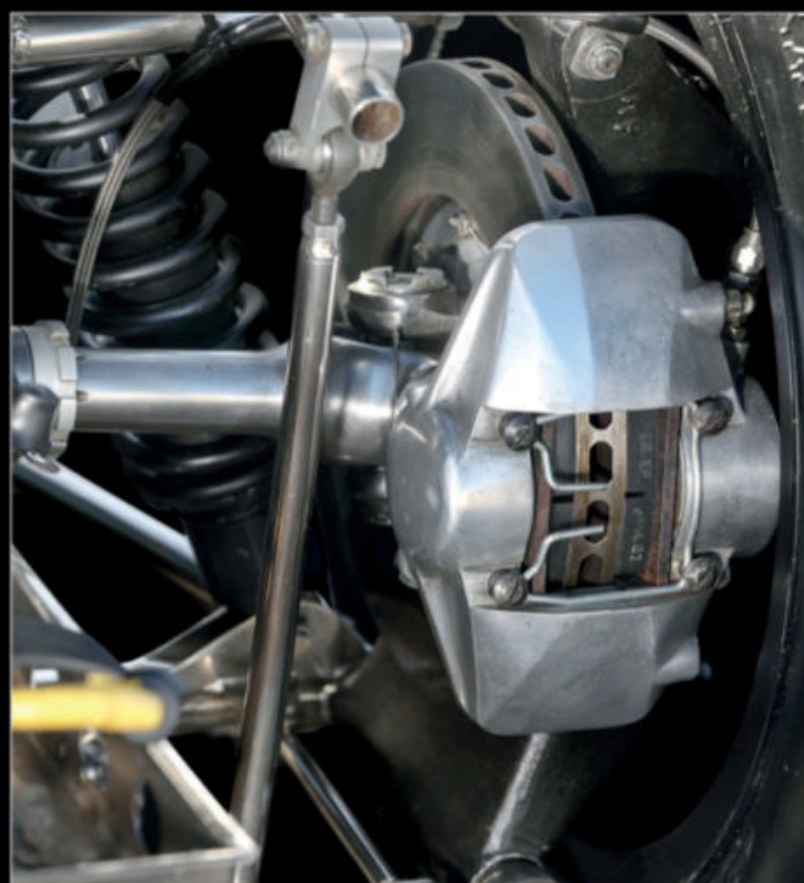
The disagreements lasted long into the night at an ill-tempered meeting, followed by a high-level summit at HQ where Sir Alfred Owen asked Rudd to tender his resignation... or sacked him. As ever with BRM, accounts vary.

A restructure of operations followed in which Aubrey Woods returned as chief engineer and Tim Parnell, whose father's team had been inactive since Monaco, joined as team manager. ►

BRM P139

NOW  
THAT  
WAS  
A  
CAR

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With Owen's say-so, Surtees had already sounded out Tony Southgate – most recently the architect of Bobby Unser's 1968 Indy 500-winning Eagle – to join the BRM engineering team as chief designer. There was a brief overlap between the two before Rudd departed to join Lotus Engineering.

"I found myself in the middle of a hornets' nest," Southgate would recall. He was very much part of 'Team Surtees' in this factional tumult, having been employed at the behest of BRM's lead driver, something which sat ill with many time-served employees. Nevertheless he knuckled down to his mandate, which was to improve the P139 in the short term while working on an all-new design for 1970. Southgate rapidly concluded the P139 would require a lot of work to make it competitive, for its suspension and mountings were flexing under load.

There was also the question of the 'wing car'. Wright recalls the project progressed as far as testing experimental bodywork: "We ran with pannier sidepods, which were empty. We measured some pressures and figured out that they didn't do any harm, but they didn't achieve very much."

A key piece of knowledge was missing, and Wright would make the discovery by accident several years later while working at Lotus and evaluating a similar theory in the windtunnel. For ground-effect aerodynamics to work, the underbody airflow has to be sealed off at the sides to prevent

more air being drawn in through there, compromising the suction effect. The Lotus breakthrough came when an ageing windtunnel model began to sag, generating the negative pressure Wright was seeking.

Southgate terminated the 'wing car' project and focused on appeasing Surtees. BRM withdrew from the French GP on 6 July but reappeared two weeks later for its home event with a much-changed P139 for Surtees. Apollo 11 entered the orbit of the moon on race day but BRM's performance was less than stellar. The P139 had new bodywork which formed a continuous line from front to rear in plan view, with the oil coolers consolidated into a single unit between the gearbox and rear wing. Despite additional strengthening at the rear to bolster torsional rigidity, the P139 was claimed to be lighter than before. Surtees qualified sixth, made a determined start, and had reached third place as the field exited Stowe – and then his front suspension broke. Oliver, 13th on the grid in a P133, got as far as lap 19 before his gearbox failed.

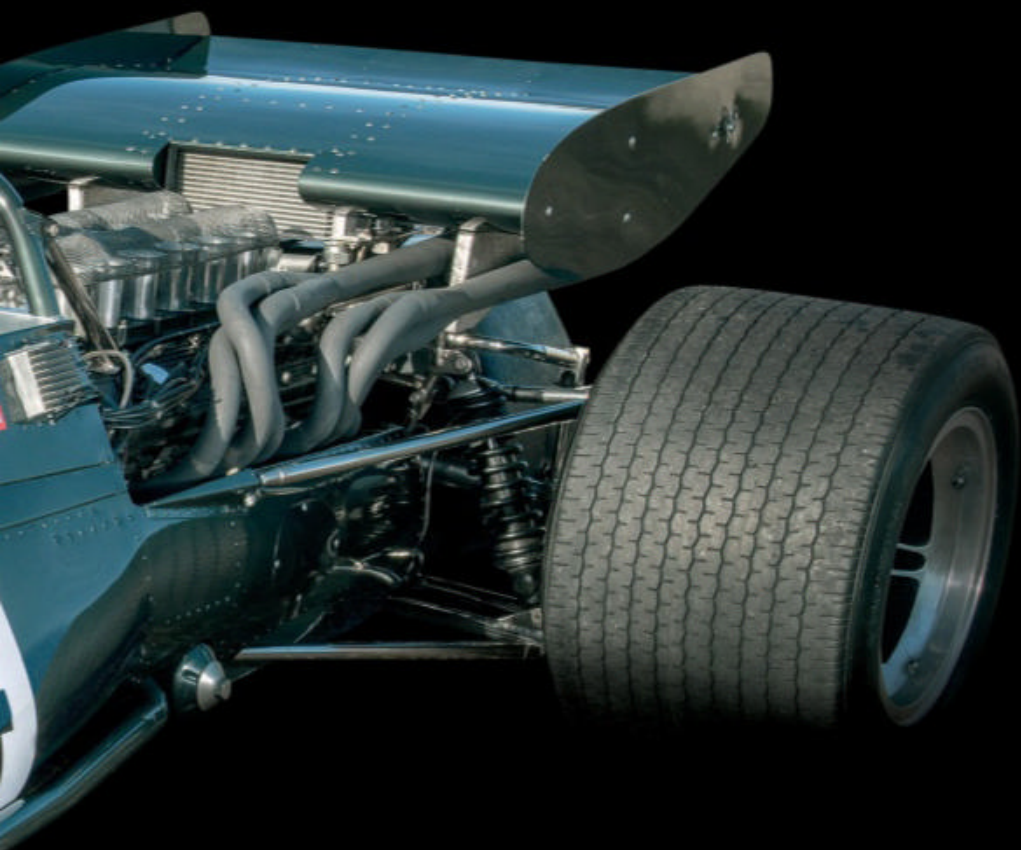
At the Nürburgring the P139 featured a new rear spoiler and – supposedly – strengthened front suspension. But its handling continued to be "spooky", according to Southgate, to the extent that Johnny Servoz-Gavin was faster in an F2 Matra. Disconcerted by the flexing of the chassis, Surtees refused to race and the team had to confect an excuse for his withdrawal.

# BRM P139

# NOW THAT WAS A CAR

No118





#### RACE RECORD

**Starts** 11  
**Wins** 0  
**Poles** 0  
**Fastest laps** 0  
**Podiums** 1  
**Championship points** 4

#### SPECIFICATION

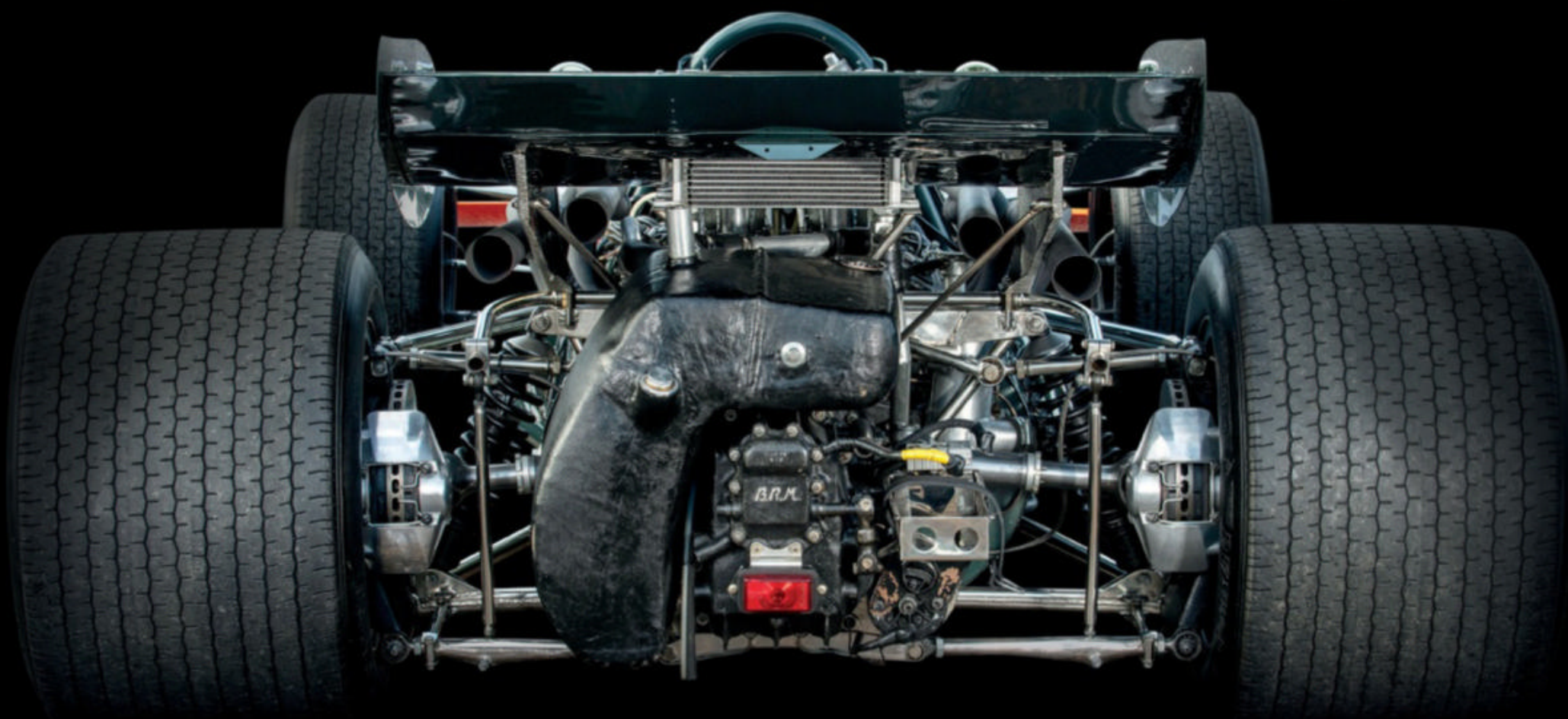
**Chassis** Aluminium monocoque  
**Suspension** Lower wishbones with upper rocker arms and inboard springs/dampers (front), lower wishbones with upper radius arms and outboard springs/dampers (rear)  
**Engine** Naturally aspirated BRM P142 V12  
**Engine capacity** 2998cc  
**Power** 450bhp @ 10750rpm  
**Gearbox** Five-speed manual  
**Brakes** Steel discs front and rear  
**Tyres** Dunlop  
**Weight** 550kg  
**Notable drivers** John Surtees, Jackie Oliver

## DISCONCERTED BY THE FLEXING OF THE CHASSIS, SURTEES REFUSED TO RACE

A second P139 was ready for Oliver at Monza but the BRMs were two seconds off the pole. Oliver stopped when he lost oil pressure, and Surtees was a non-classified runner having pitted for repairs when his car was struck by part of Graham Hill's exhaust. Engine failures ruled both cars out of the Canadian GP at Mosport but attrition elsewhere enabled Surtees to reach the podium at Watkins Glen, when he moved into third – albeit two laps down – after Jack Brabham made a late fuel stop.

For the US GP BRM also brought a third P139 chassis with a new rear suspension configuration instigated by Surtees, aimed at lowering the roll centre. He didn't race this until the season finale in Mexico where, as an indicator of BRM's financial problems, pay driver George Eaton raced the original chassis P139-01 as a third factory entry. Before retiring with gearbox failure Surtees was overtaken by privateer Silvio Moser in a two-year-old Brabham, an occasion which to Surtees confirmed the wisdom of his decision to abandon BRM and take his own team into F1 the following season.

While Southgate's all-new designs provided a competitive uplift, BRM remained in flux after Sir Alfred Owen suffered a debilitating stroke in October 1969. P139-03, photographed here, entered a peaceful retirement after starting just one race. But it *had* seen off the 'wing car'... 





# MAURICE HAMILTON'S ALTERNATIVE VIEW

When it comes to the recent clampdown on team personnel celebrating too effusively, our man isn't sitting on the fence...



**JOHN COOPER WOULD NOT HAVE** understood any of it when told about the 2023 Australian Grand Prix and Document 04, reference Appendix H, Article 2.3.2. The only document familiar to the owner of the Cooper F1 team back in the day would have been a telex or telegram confirming his start and potential prize money. Otherwise, official paperwork did not exist – save for the occasional typed notice listing lap times and pinned to a board outside race control a couple of hours after practice had finished. Even then, this would be no more than formal confirmation of lap times recorded – usually with greater efficiency than official timekeepers – by F1 wives and girlfriends with their hand-held stopwatches.

As for mentioning Appendix H, Article 2.3.2 to Cooper; you might as well have been speaking Urdu. Which, come to think of it, was the reaction of many in the Melbourne paddock when they read the race director's 'event notes' (Document 04 of more than 50 bulletins that weekend) reminding competitors of the rule forbidding the use of pitwall fencing as a vantage point to welcome drivers at the end of the race.

Cooper would have been nonplussed. "What d'you mean, boy?" he'd have spluttered. "Not celebrate? Don't be so bloody daft!" Cooper, were he still around, would have recalled welcoming home his winning cars more than 25 times in grands prix and non-championship F1 races. For the man who revolutionised F1 with the rear-engine concept, beating the opposition was something to be savoured – particularly when it involved humbling Ferrari, winner of nearly half of the drivers' championships in the 1950s.

When the privately entered Cooper-Climax of Stirling Moss crossed the line and stuffed Ferrari at Monza in September 1959, Cooper



The McLaren mechanics celebrated Daniel Ricciardo's surprise victory at Monza in 2021 in traditional fashion, especially as it was the team's first win since 2012

did a somersault and ended flat on his back – on the racetrack. Okay, the pitlane and the track had no defining wall between them, but the Englishman's acrobatics had been prompted by the Cooper Car Company from a modest garage in Surrey winning the constructors' championship for the first time.

Even if a pitwall existed, Colin Chapman would climb over it, run onto the track and throw his cap in the air in what became a much-anticipated act of showmanship each time a Lotus finished first.

Chapman began his headgear-hurling displays in the 1970s when black corduroy caps became fashionable. The last time he did it was in Austria in 1982 when Elio de Angelis beat Keke Rosberg by half-a-car's length as they crossed the line.

It mattered little to Chapman that, even by the standards of 1982, the Österreichring pit straight was very narrow and Rosberg couldn't have been more than a couple of metres away as the pair blasted past, side-by-side. This victory, the first for Lotus in four years, meant so much to the

**COOPER WOULD HAVE BEEN NONPLUSSED. WHAT D'YOU MEAN, BOY?" HE'D HAVE SPLUTTERED. "NOT CELEBRATE? DON'T BE SO BLOODY DAFT!"**





**An exuberant John Cooper atop the garages at the Dutch GP in 1959. Thankfully, it wasn't a race one of his cars won...**

**Colin Chapman was another boss known for his celebrations, often involving his cap. This is the Lotus boss saluting Emerson Fittipaldi for his 1973 Brazilian GP success**



**A calm Brabham pitwall during the 1984 US GP at Detroit. At the race's climax it became a sea of mechanics that spilled onto the track, preventing a challenge to leader Piquet**

team that Chapman was accompanied on track by three mechanics – one of whom was leaping in the air while holding aloft a huge pit board declaring 'Elio P1'. Today, such a scene would cause the race director to freak out and check in immediately at the Michael Masi Memorial Home for the Badgered and Bewildered.

Health and Safety in 1982 amounted to cutting back cigarette consumption to 20 a day and using condoms. Track invasions were part of the routine; a light-hearted gamble at a time when more extreme risks were defined by severe injuries – and occasionally worse – for drivers.

In Detroit in 1984, Martin Brundle chased down Nelson Piquet but was prevented from having a go at the ailing Brabham as they headed for the line because Piquet's delirious mechanics were already mob-handed on the finishing straight. Ironically, among them was Charlie Whiting, later to become the highly respected F1 race director with safety as his number-one

priority. It was only a matter of time before common sense prevailed and regulatory restraint meant team personnel remained behind the pitwall. Then came the equally sensible protection along the top of it.

That said, in the light of Document 04, and given that the fences are designed to withstand the impact of a wayward F1 car and its flying parts, is it not reasonable to assume that the mesh grills could cope with the adventurous efforts of even the burliest mechanic? It seems equally fair to suggest that F1 personnel are prudent enough, even in the euphoria of victory, to ensure they don't disappear over the top and fall in a happy heap on the racetrack.

Mind you, there have been occasions when the curtain of fencing would have spared a driver the realisation that his crew had buggered off through lack of interest. Cast your mind back to 1999, when Ferrari was reluctant to cast Eddie Irvine as saviour following Michael Schumacher's

leg-breaking accident at Silverstone. Going into the Hungarian GP a few weeks later, Irvine was leading the championship as he started from the front row. When he made a mistake and presented a one-two to arch-rival McLaren, team principal Jean Todt was not best pleased. I watched the finish from the commentary booths opposite as a couple of Irvine's loyal mechanics gave a desultory wave from the pitwall. Todt and his management team, despite having a podium finish, were already back in the garage, preparing a press release that stated baldly: "Despite great work from the mechanics in the pits, Eddie lost second place when he went wide at a corner."

Nonetheless, when a plan works well at the end of a tense and tough weekend, a driver needs to sense his team's immediate joy and not be left with the proposed sterile version of canned applause. If the likes of John Cooper had been presented with Document 04 or its equivalent, they'd be... well... climbing the bloody walls, boy!



## SHOWCASE

# CANADIAN GRAND PRIX

Pretty much a regular on the calendar since 1967, it's a race that continues to throw up some surprises

▼ Montréal has hosted the race since 1978, on a circuit based on the the man-made Notre-Dame Island in the St Lawrence river. In 1988 the pits were moved to their current position, shown here in 1990











*Victor 'Al' Pease had already entered the 1967 and 1968 Candian GPs in a privateer Eagle, when he finished 43 laps down and failed to qualify respectively. In 1969 he tried again and was black-flagged for being too slow, having only completed 22 laps when the leader had done 46*



*After a half season with HRT in 2011 and two full campaigns with Toro Rosso, Daniel Ricciardo got the call to replace Mark Webber at Red Bull for 2014. In Canada, only his seventh race with the team, he claimed his first F1 win, charging through to pass leader Nico Rosberg two laps from the end*



*The first world championship Canadian GP was held in 1967 at Mosport Park, the country's first permanent race track, which is located in Ontario, 40 miles from Toronto. Jack Brabham was the first winner of the race, ahead of Brabham team-mate Denny Hulme and Dan Gurney in the Eagle*







◀ In 1978, driving for Ferrari, Gilles Villeneuve claimed his first F1 win and he managed it on home soil, at the Circuit Île Notre-Dame in Montréal. Following his death in 1982, the circuit was renamed in his honour

▶ Lewis Hamilton is a fan of the Canadian GP. He claimed his first F1 win in the race in 2007, and triumphed again in 2010 and 2012. After that third victory he strangely opted for a dip in Montréal's Olympic rowing lake



▶ The first 14 Canadian GPs, from 1967-1981, were held in late September/early October which meant bad weather was always likely. The 1978 race, the first in Montréal was no different. Friday and Saturday morning running was wet and Derek Daly found his Ensign, quite literally, stuck in the mud. Come a cold but dry race day, the Irishman claimed Ensign's first F1 point after finishing sixth

▼ Sebastian Vettel was winless in 2019 going into the Canadian GP but was leading on lap 48 when he went across the grass at Turn 4. On returning to the track he squeezed Lewis Hamilton towards the wall and, although he finished first on the road, Vettel's five-second penalty for this move dropped him behind Hamilton in the results







*The 2011 race goes down as the longest race in F1 history at over four hours, including a red flag period. The fun and games started when Lewis Hamilton dived inside Mark Webber at Turn 1. Eventual winner Jenson Button passed the tangling pair as they slid off on the outside of Turn 2*



*It took over half an hour to extract Ian Ashley from the wreckage of his Hesketh, following a shunt in practice for the 1977 Canadian GP. Ashley had hit one of the bumps on the main straight at Mosport Park and flipped. Ashley never raced in F1 again, but did make some Indycar starts in 1986 and 1987*







In 1977 Canadian businessman Walter Wolf's F1 team had become a constructor, with the Harvey Postlethwaite-designed WR1. The team was based in Reading but ran under a Canadian licence and with Jody Scheckter as its driver won its 'home' race, the car's third and final victory of the season



Groundhogs, or marmots, are regularly seen during the Canadian GP but not all make it through the weekend: Anthony Davidson hit one in 2007, as did Romain Grosjean in 2018. Efforts are made to keep them off the track but the protected animals are indigenous to the Île Notre-Dame



Tyrrell Racing had been a part of the F1 scene since 1966, running Matras and March 701s. The 1970 Canadian GP, however, was when the team made its debut as a constructor with the 001, the car the team had built in secret. Jackie Stewart put the 001 on pole but retired after 31 laps with axle issues





The final corner on the Circuit Gilles Villeneuve is the chicane before the start/finish straight. In 1999 the wall on the exit became known as the Wall of Champions. First Michael Schumacher (1994 and 1995 champion) and then Damon Hill (1996) and Jacques Villeneuve (1997) ended their races there



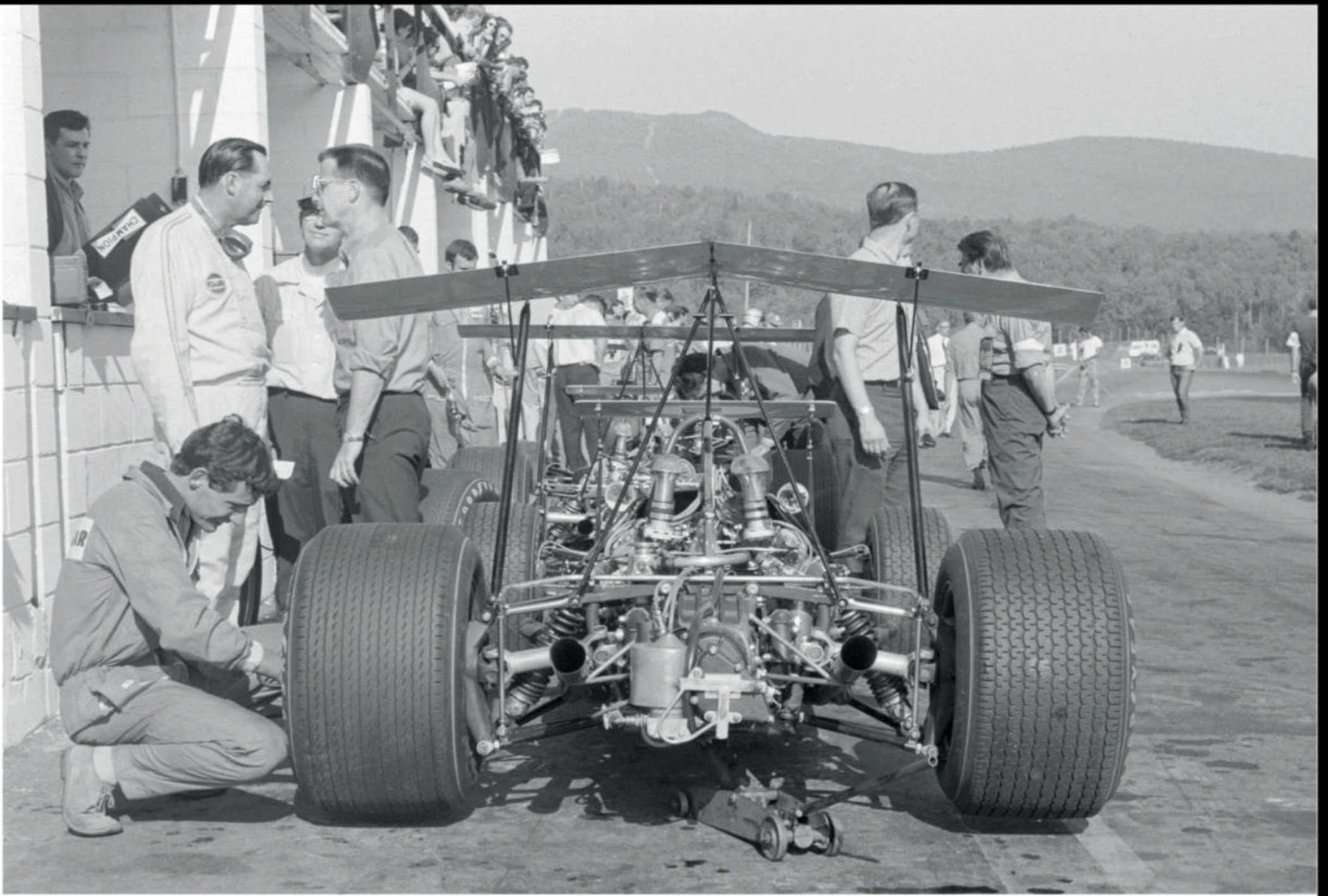
In 12 Canadian GPs Nigel Mansell managed a solitary win. That one triumph came, with sparks flying, in 1986 but Mansell should have won again in 1991. On the last lap he was leading by 57s when his engine stopped, supposedly because he let the revs drop too low while waving to the crowd



Brothers had raced together in F1 before Ralf Schumacher joined older sibling Michael on the grid in 1997, but the pair took it to a new level at the 2001 Canadian GP. Ralf, driving for Williams, won the race with Michael's Ferrari second, the first time brothers had made the podium together







In 1968 F1 teams were looking for extra aerodynamic help to increase grip and this led to a variety of tall wing structures at both the front and rear. One of the more unusual rear wings was this anedral version on the Brabham BT26 used during the 1968 Canadian GP. The wing could be altered to a more conventional dihedral position, via a lever in the cockpit



Ayrton Senna won the Canadian GP twice, in 1988 and 1990, but his final appearance in Canada wasn't a happy one, as you can see from this picture. Leading the championship going into the race Senna qualified his McLaren MP4/8 a lowly eighth, but was running second behind title rival Alain Prost's Williams when his alternator failed with seven laps remaining. Disappointed, Senna opted to get a lift back to the pits with his car



Incidents at the first corner of the Circuit Gilles Villeneuve are a fairly regular occurrence, but the first-lap shunt in 1998 is easily one of the biggest. This inverted Benetton of Alex Wurz had just clipped Jean Alesi's Sauber and ended up rolling again when it hit the gravel trap. Wurz, Alesi and Jarno Trulli (Prost) all then ran back to the pits to get into spare cars in readiness for the restart







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FINISHING STRAIGHT

## RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 4

# THE AZERBAIJAN GP IN 5 KEY MOMENTS

### 1 Pérez becomes Baku's first repeat winner

The first six Formula 1 grands prix in Azerbaijan had produced six different winners – but, after the seventh edition, the Baku promoters will find it much harder to lean into their 'expect the unexpected' tagline, since there was little surprise in Sergio Pérez winning yet another street circuit race. Since joining Red Bull just over two years ago, the Mexican has won in Baku, Monaco, Singapore and Jeddah; owing to the relative scarcity of other street circuits on the calendar he has inevitably started to repeat himself.

In fact, his victory on Sunday was Pérez's third in Baku since he had also won the sprint the day before, on the first weekend F1 trialled a new format in which the Saturday race is effectively split off into its own mini-event.

This has entailed giving it its own qualifying session, which replaced the morning practice and was dubbed the Shootout.

Pérez had a near-perfect Saturday. After losing only to Charles Leclerc in the morning, Checo only required seven laps (out of 17) in the afternoon to overtake the Ferrari and win. He could have certainly overtaken earlier, too, had it not been for a Safety Car. Only Max Verstappen could have really challenged him, but Max was a little slow at the start and got into a scrap with George Russell. Not wanting to let the Mercedes pass, even though he was on the outside line, Max took a hit in the second corner, which left an impressively large hole in the left sidepod of the Red Bull. On top of that, Russell managed to get past Max in Turn 3.

Even with a damaged car, Verstappen had no trouble regaining position from Russell. On the lap-six restart, after a brief Safety Car period, Max got ahead of the Merc but then was unable to challenge Pérez and Leclerc for the remaining 11 laps – supposedly due to that very hole in the

sidepod. Max then accosted George in parc fermé to express his displeasure, calling his rival "a dickhead" after a heated exchange.

Sunday could have been Max's chance to make up for the weekend, but it just wasn't to be. The Red Bull pair couldn't match Leclerc's one-lap pace in Baku, so Charles started from pole and held off Max, who had lined up next to him on the grid. But Leclerc then had no weapons to defend against the Red Bull's top speed, boosted by its mighty DRS. Verstappen and Pérez passed Charles on laps four and six respectively and began to break away.

The outcome of the race was ultimately decided by a Safety Car period, triggered by a rather clumsy crash by Nyck de Vries. The Dutchman clipped the inside wall at Turn 5 on lap 10, damaging his AlphaTauri's left-front suspension, and parked his car a few metres later, unintentionally complicating his compatriot's race. Live footage of an AlphaTauri at the side of the road, strangely enough, didn't alarm the Red Bull engineers, who called Verstappen into the pits for a new set of

Pérez's superb run at street circuits continued in Baku and the Mexican also claimed victory in the sprint race on Saturday afternoon



Pérez behind the Safety Car, which had been called out for de Vries' stranded AlphaTauri. Pérez pitted and still retained the lead



Verstappen was unhappy with the way Russell had defended third position in the sprint on Saturday and let him know that after the race



PICTURES: ZAK MAUGER; ANDY HONE; MARK SUTTON; SIMON GALLOWAY



**Leclerc continues to star in qualifying in Azerbaijan** The Ferrari driver was on pole for both the sprint race and the GP itself



**DRS issues hampered Aston Martin all weekend but Alonso still managed to finish within a second of Leclerc on Sunday**



**Although Leclerc was still second by the time of the Safety Car on Sunday, he was unable to hold off Verstappen for long after that**

hard tyres – just before realising de Vries couldn't really reverse and continue.

Verstappen's stop, combined with a decision by race control to bring out the Safety Car, handed the lead to Pérez, who kept it after pitting a lap later. More importantly, Max again found himself behind Leclerc, who had also got a 'free stop' under the Safety Car.

Max passed Leclerc immediately after the restart on lap 14 but didn't cause Pérez any serious trouble for the remaining 37 laps. As in Jeddah, Checo didn't give Max the slightest chance, not only keeping him out of the DRS zone, but even opening up a four-second gap at one stage.

Pérez's second win in Baku in three years, and fifth for Red Bull on the street circuit, reduced his championship deficit to just six points, but his title challenge will now largely depend on whether he's able to consistently win races on tracks with white lines instead of walls.

## 2 Two poles and a first podium for Leclerc

**There must be something** Charles Leclerc knows about the Baku circuit that his rivals don't. He's been unbeatable in qualifying there since 2021, keeping the streak going in 2023 despite Ferrari's woeful start to the season. Though Ferrari

had scored zero points in the previous race in Melbourne, the team insisted it had made a step forward in terms of understanding its car. Leclerc was able to demonstrate this on both Friday night and Saturday morning in Baku, beating the Red Bulls in qualifying as well as in the sprint shootout.

Nevertheless, Leclerc himself was reluctant to set any bold targets for the sprint and main race, knowing full well Red Bull's main advantage in the first three grands prix had been its race pace.

Leclerc did manage to finish ahead of Verstappen in the sprint, but largely thanks to Max's collision with Russell. Pérez, meanwhile, pulled almost five seconds clear of Charles by the end of the 17-lap race and probably could have gone further clear if he'd wanted to.

Sunday was even more sobering. There is less reason to believe that Pérez and Verstappen were cruising towards the finish as they seemed to be fighting for victory, but the 20-second gap they managed to open up on Leclerc within three and a half dozen laps after the restart is more than enough to conclude Ferrari had no shot at winning – regardless of the special relationship Leclerc has with this track.

Moreover, by the end of the race, Leclerc had been nearly overtaken by Fernando Alonso, who had started the weekend on the back foot thanks to Aston Martin's DRS problems. The overtaking device on the Aston's new low-drag rear wing failed, meaning Alonso and team-mate Lance Stroll were

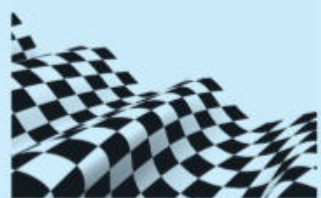
a couple of tenths slower on the main straight than their rivals in qualifying and Saturday's shootout, and lost positions on both grids as a result.

In time for the sprint, the team found a temporary solution that, according to Aston team principal Mike Krack, was "not far from [just] using WD-40" but still allowed the drivers to recover.

Alonso was more successful, moving from eighth to sixth on Saturday night and finishing within a second of the podium on Sunday. After starting sixth, Fernando got past Lewis Hamilton thanks to the Mercedes driver's pre-Safety Car pitstop, and then muscled past Carlos Sainz on the restart. Fernando then tried to save his tyres to attack Leclerc at the end, but the Ferrari had just enough pace for Charles to hold him off. Despite missing out on the podium for the first time in 2023, Fernando wasn't too disappointed.

"In a bad weekend for Aston we are fighting for the podium against one of the best weekends for Ferrari," smiled Alonso after the finish. "They were on pole position on the sprint race, pole position for the main race. And they were just one second in front of us on Sunday. So good news." ▶





FINISHING STRAIGHT

# RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 4



Gasly's fire in the only practice session on Friday kicked off a disastrous weekend for Alpine when the team failed to score points

## 3 Another shocker for Alpine

If there were a special prize for the worst weekend of the season, Alpine would have had every chance of winning it – since it's hard to imagine one worse than that which Team Enstone endured in Baku.

Alpine arrived in Baku full of hope. Despite having to rebuild both cars after Pierre Gasly and Esteban Ocon crashed in Melbourne, it brought numerous updates to Azerbaijan in a bid to catch up with the likes of Aston Martin, Mercedes and Ferrari. But in the end it left Baku empty-handed again.

The horror show began a few minutes into the Azerbaijan GP's only practice session when Gasly stopped with a hydraulic leak, which then caused a full-blown engine fire, meaning his session was cut short. Ocon, meanwhile, spent most of the practice in the garage with a gearbox problem, leaving the team without information not only about its upgrades but also about basic setup.

The mechanics managed to get Gasly's car running again in qualifying, but he found no better way to thank them than by crashing the car at the

start of Q1. Despite a lack of practice time, Ocon made it to the second segment of both the main qualifying and shootout sessions, but the team then had to breach parc fermé due to concerns over the wear of his plank before the sprint, meaning a pitlane start not only for Saturday's short race but also for Sunday's main event.

As a result, both drivers failed to score points on both Saturday and Sunday.

"I can't compare this weekend to any other weekend," said Alpine's sporting director Alan Permane on Sunday evening. "Honestly, it's been so frantic and fraught and difficult. It doesn't feel like any other weekend."

Coming from someone with more than 30 years of experience working in Formula 1, that really says something.

## 4 McLaren upgrades work, Norris best-of-the-rest

McLaren might have scored just two points in Baku, compared with 12 in Melbourne, but it was Baku which could well have been its best

performance of the season so far.

The Woking-based team made the first of a series of upgrades to the MCL60, which included a new floor, and it seems to have had the desired effect. Lando Norris qualified seventh on Friday and was even a little unhappy since he thought he'd had a chance of qualifying fourth. With all four top-team cars finishing the main race (unlike in Australia), Lando's best possible result was 9th, which he took with relative comfort in the end.

"Everyone back in the factory seems happier, more optimistic," he said after the finish. "I know we've probably said that in the past at times, but I have even more faith in terms of the ability that with the new structure and some of the new people we have and things like that, that everyone's a bit more free and willing to try new things and make bigger steps and so on. We have things coming which are looking good and definitely bigger steps than we had this weekend."

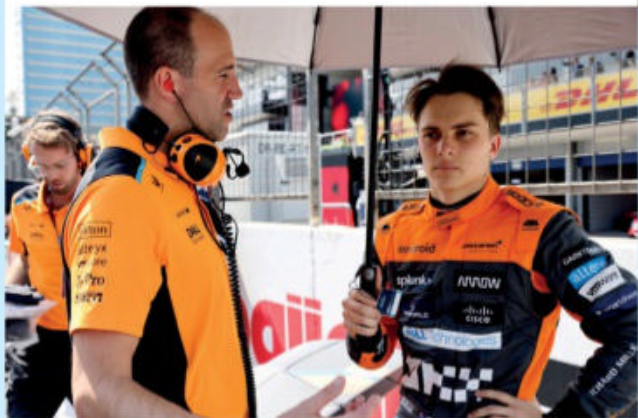
Oscar Piastri finished 11th, his weekend compromised by an illness which almost forced the team to withdraw him from the sprint. "I think I've had about four pieces of toast for the whole weekend," he revealed on Sunday evening. "So, happy to see the end of it."

PICTURES: ZAK MAUGER; ANDREW FERRARO; MARK SUTTON





McLaren's upgrades to the MCL60 allowed Norris to qualify seventh and finish ninth



Piastri was ill throughout the meeting and was nearly withdrawn from the sprint race

# 5 FIA taken to task for pitlane chaos

There are two types of race in Baku: a madcap thriller or a soporific procession. The latest edition was the latter – and in a way it’s fortunate to be remembered (or, more likely, forgotten) as such, because it had a very good chance of making a much bigger mark in F1 history, for all the wrong reasons.

Esteban Ocon was one of the few drivers to start on hard tyres, his strategy hindered by an early Safety Car. It was too soon to change to mediums, leaving Alpine with only one option for points – to keep Ocon on track and hope for a red flag or another Safety Car. Neither of these eventuated and, to avoid disqualification for falling foul of race-tyre rules, Esteban dove in to change rubber before the final lap – only to find the throng of photographers and marshals at the pitlane entrance. Surprisingly, the FIA staff responsible for organising the podium ceremony had begun their preparations with one lap to go – and almost caused some rather unpleasant consequences. The crowd in front of Ocon dispersed at the very last moment.

“I arrive at 300 km/h, brake very late and see the barriers and the people around me. It was

crazy, it could have been a big one today,” Esteban said afterwards.

The FIA stewards, after hearing the explanations of those responsible, issued a statement strongly advising a change of procedure before the Miami race.



Ocon admitted he was shocked to see a crowd of people at the pitlane entrance at his stop

## RESULTS ROUND 4

BAKU CITY CIRCUIT / 30.04.23 / 51 LAPS



1st	Sergio Pérez	Red Bull	1h32m42.436s
2nd	Max Verstappen	Red Bull	+2.137s
3rd	Charles Leclerc	Ferrari	+21.217s
4th	Fernando Alonso	Aston Martin	+22.024s
5th	Carlos Sainz	Ferrari	+45.491s
6th	Lewis Hamilton	Mercedes	+46.145s
7th	Lance Stroll	Aston Martin	+51.617s
8th	George Russell	Mercedes	+74.240s
9th	Lando Norris	McLaren	+80.376s
10th	Yuki Tsunoda	AlphaTauri	+83.862s
11th	Oscar Piastri	McLaren	+86.501s
12th	Alex Albon	Williams	+88.623s
13th	Kevin Magnussen	Haas	+89.729s
14th	Pierre Gasly	Alpine	+91.332s
15th	Esteban Ocon	Alpine	+97.794s
16th	Logan Sargeant	Williams	+100.943s
17th	Nico Hülkenberg	Haas	+1 lap
18th	Valtteri Bottas	Alfa Romeo	+1 lap


Retirements		
Zhou Guanyu	Alfa Romeo	36 laps/overheating
Nyck de Vries	AlphaTauri	9 laps/accident

Fastest lap	
George Russell	1m43.370s on lap 51

F1 Sprint - 17 laps			
1st	Pérez	2nd	Leclerc
3rd	Verstappen	4th	Russell
5th	Sainz	6th	Alonso
7th	Hamilton	8th	Stroll

TYRE COMPOUNDS USED				
Hard (C3)	Medium (C4)	Soft (C5)	Inter	Wet

CLIMATE	AIR TEMP	TRACK TEMP
Sunny	28°C	44°C

DRIVERS' STANDINGS 

1	Verstappen	93pts	11	Piastri	4pts
2	Pérez	87pts	12	Bottas	4pts
3	Alonso	60pts	13	Ocon	4pts
4	Hamilton	48pts	14	Gasly	4pts
5	Sainz	34pts	15	Guanyu	2pts
6	Leclerc	28pts	16	Tsunoda	2pts
7	Russell	28pts	17	Albon	1pt
8	Stroll	27pts	18	Magnussen	1pt
9	Norris	10pts	19	Sargeant	0pts
10	Hülkenberg	6pts	20	De Vries	0pts





FINISHING STRAIGHT

## RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 5

# THE MIAMI GP IN 5 KEY MOMENTS



Verstappen and Pérez battle, albeit briefly, for the lead. Max came out on top and the RB19 was streets ahead of the competition

Verstappen made short work of the eight cars that started ahead of him to make it five wins out of five and a fourth 1-2 for Red Bull



At his only stop Sainz managed to get ahead of Alonso, only to incur a pitlane speeding penalty and then drop down the order anyway



# 1 Red Bull shows true pace at last as Verstappen wins from ninth

**Max Verstappen** gave a true champion's performance and delivered a chilling demonstration of the RB19's true potential. This was a genuine race for victory between the two Red Bull drivers – albeit one not contested with them driving in close quarters for the most part – and this makes the margin more telling. One would have needed a rear-pointing telescope rather than a mirror to see third-placed Fernando Alonso, who crossed the finishing line nearly half a minute after the winner.

Verstappen did his chances few favours when he overcooked it on his first flying lap in Q3, which meant ninth place was 'baked in' when Charles Leclerc smote the wall on his second flying lap. With insufficient time left to restart the session and enable everyone to complete an out-lap, the red flag signalled an end to proceedings and left Sergio

Pérez on pole with Alonso's Aston Martin second.

The top seven started on mediums but Max opted for an offset strategy with a long first stint on hard Pirellis. He was cautious at the start, losing a place to Valtteri Bottas, but was slicing through the field even before DRS was enabled. And as the leading medium runners all complained about graining, even bringing planned pitstops forwards, the race fell further into Max's grasp. Pérez simply couldn't build enough margin to stay ahead once Verstappen swapped to mediums later on.

Having kept the hards alive for 45 laps before stopping, Max emerged from the pits 1.5s behind his team-mate. By this point Pérez's hards were 24 laps old and he had no chance. Two laps later Max sent it around the outside at Turn 1 and Checo made a brave stab at defending before capitulating.

"The first stint was really poor with the graining that we had on that initial pace," said Pérez. "And that compromised quite a lot of our race."

"Max was particularly strong today, so a well-deserved win for him."

Verstappen revealed that he and race engineer Gianpiero Lambiase had hatched the hard-compound gambit and presented it to the team's strategists, who agreed that there would likely be little difference in terms of race time between a medium/hard or hard/medium race. The limiting factors would be down to circumstances.

"When you start on the hard, the risk is a bit higher because we only had one set, so if you had a lap one puncture or whatever, then of course your race is a bit tougher," said Max. "But I was happy to take that gamble and do it the other way around."

PICTURES: JAKE GRANTY, MARK SUTTON; ALEXANDER TRIENITZ; STEVE ETHERINGTON; MICHAEL POTTS



Ferrari was largely in absentia from the leading group as Leclerc laboured all weekend with a car whose balance shifted through the lap, consigning him to front-midfield status. Team-mate Carlos Sainz did leapfrog Alonso during the pitstops but was over the speed limit when he crossed the line at the pit entry, earning himself a penalty. He too was afflicted by balance issues, possibly as a result of the SF-23's wind sensitivity – team boss Frédéric Vasseur reckoned Carlos lost 25s over the final stint – and fell into a big enough gap between the two Mercedes that the penalty had no effect on his finishing position of fifth.

## 2 Russell and Hamilton overcome Merc's Miami vices

**Even by Mercedes' current** standards this was a rollercoaster of a weekend. Buoyed on Friday by finishing 1-2 in first practice, neither Lewis Hamilton nor George Russell could get the W14 to work on the soft-compound Pirellis in qualifying. It was so bad that Hamilton failed to make the Q3 cut, starting from 13th behind the Williams of Alex Albon and Nico Hülkenberg's Haas.

This will be the last time the W14 races in this configuration ahead of a comprehensive update – floor, bodywork and front suspension – due at Imola. The target, said team boss Toto Wolff, is to “take certain variables off the table, where we believe we could have introduced something we don't understand”.

If the object of this race was damage limitation, Mercedes certainly achieved it. Running Russell and Hamilton on split strategies, with Hamilton on the

riskier ask of starting on the hard tyres, delivered probably the best result either driver could have expected – assisted by smooth teamwork. Russell started sixth but made short work of the out-of-position Kevin Magnussen and Pierre Gasly (neatly using Max Verstappen's wake with the latter). There was a moment of peril after he stopped for hards and became bottled up behind Lance Stroll's Aston Martin, which was still on its first set of tyres and Stroll was ill disposed to make a pass easy. Once past, Russell caught his team-mate and Lewis waved him by, enabling him to catch and pass both Esteban Ocon and Carlos Sainz. Fourth place at the chequered flag was a good reward for a measured race.

Hamilton was pinched between Albon and Hülkenberg at the start and had to back out, which locked him into the DRS train which formed behind

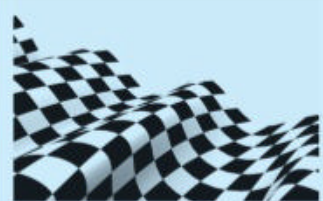
**Hamilton gazes at the W14, which was exceedingly unpredictable in Miami. Merc's big update is due at the next race in Imola**

Valtteri Bottas's Alfa Romeo. Running long on the hards enabled him to pick up places but also meant he had to let his team-mate by after Russell stopped. Over a final 20-lap stint on mediums Hamilton displaced Magnussen and Gasly, then reeled in and passed Charles Leclerc's wayward Ferrari. Carlos Sainz was too far up the road despite his penalty, meaning Lewis had to settle for sixth. Little to be upbeat about after the scenes in Melbourne, where Hamilton reached the podium, but to describe him as “seething” – in the words of paddock rent-a-quote Ralf Schumacher – was perhaps going a bit far. ▶

**Russell heads Hamilton after being waved through by his team-mate, following Russell's pitstop to change to hard tyres,**







FINISHING STRAIGHT

# RACE DEBRIEF

F1 WORLD CHAMPIONSHIP ROUND 5

## 3 Double points finish for Alpine after boss blast

**Alpine secured a timely** double points finish in the wake of a scathing assessment from CEO Laurent Rossi who, in an interview with French TV station Canal+ ahead of qualifying in Miami, described the team's performances this season as "amateurish" and "mediocre". Having secured just eight points in the first four races Alpine arrived in South Florida behind even McLaren, whose performance this season has been abject enough to warrant a restructure in the technical department.

Rossi subsequently gave an interview to Formula 1's own website in which he made a clear threat to swing the axe unless the team shapes up.

"They have the means to get fourth, more so than others," he said. "I want them to be fourth. If they don't, it's going to be a failure. If they fail by giving 500% best and turning this ship around, there will be extenuating circumstances and it bodes well for the future.

"If not, it's the rule of business, there's going to be consequences. And I won't wait until the end of the year."

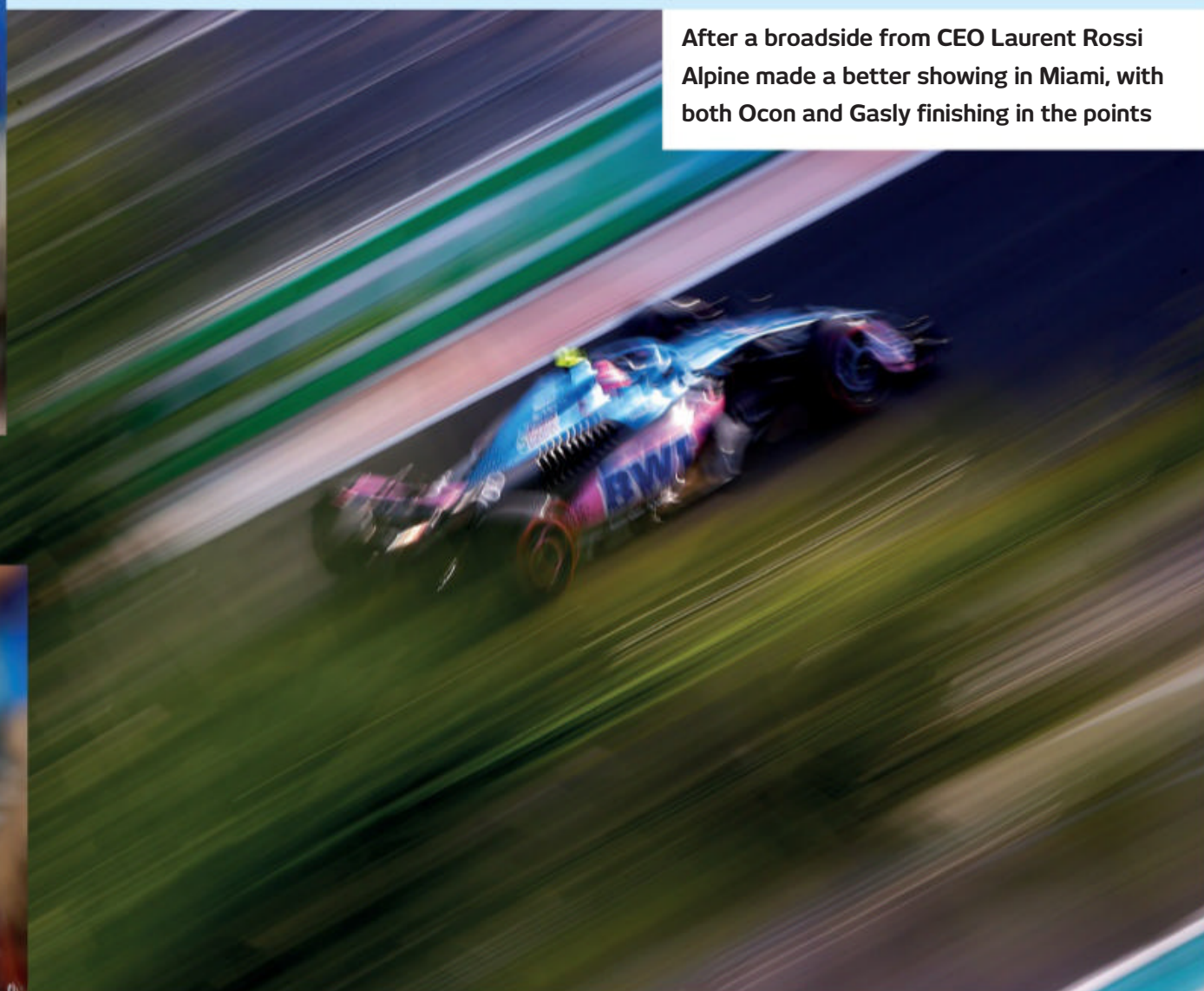
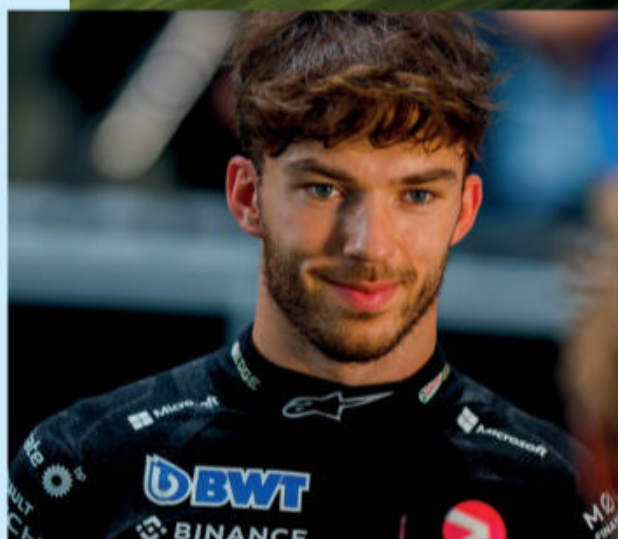
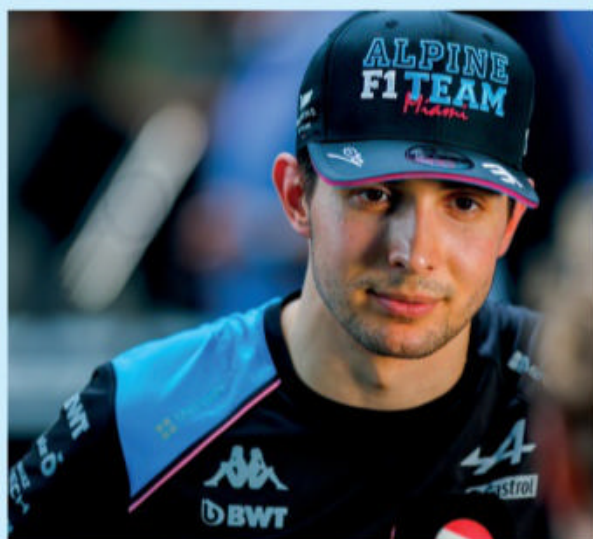
Both Pierre Gasly and Esteban Ocon made it through to Q3. Gasly's first run was good enough for him to start fifth on the grid owing to the disruptive effect Charles Leclerc's red flag had on others' runs. This left Pierre ahead of faster cars who duly passed him once the race got going but he drove reasonably cleanly throughout, with the notable exception of a lock-up at Turn 1 which enabled Leclerc to pass him more easily than might otherwise have been the case. Eighth place was his reward.

Ocon was on a different strategy, the first starter on hard-compound Pirellis from his eighth-place grid slot. Naturally he lost out to Max Verstappen straight away but he also picked up enough wheelspin to enable Valtteri Bottas to sneak by, which cost Ocon time in the DRS train which ensued. After a long first stint on the hards he was undercut by Hamilton but made good use of the mediums to catch and pass Kevin Magnussen's Haas for ninth late on, despite having to fuel-save.

## 4 Plucky Magnussen holds on for points

**Logic dictates that** an out-of-position midfielder running higher than their usual place in the pecking order should focus on their own race and allow faster cars through. But Kevin Magnussen is a warrior as well as a pragmatist and his performance in Miami ranked as a high spot of what was otherwise a processional and uneventful encounter.

Having made it to Q3 on merit, Magnussen got lucky in two ways – firstly in emerging unpunished from a stewards' investigation into him potentially impeding Lewis Hamilton in Q1, secondly in Leclerc's halting Q3 early and with several drivers yet to set a clean flying lap. From fourth on the grid he was inevitably going to drop down the order but he minimised the damage despite what he described as "a shitty start". He made Leclerc's race an abject misery for 38 of the 57 laps, even repassing the Ferrari immediately after Leclerc used DRS to get by at the hairpin at the end of the second lap. Granted,



**After a broadside from CEO Laurent Rossi Alpine made a better showing in Miami, with both Ocon and Gasly finishing in the points**

PICTURES: STEVEN TEE; MARK SUTTON; ANDY HONE; ALEXANDER TRIENITZ



Magnussen fought for his place and kept  
Leclerc at bay for a huge chunk of the race



Verstappen was overtaking them both while this dispute raged, but the Red Bull is on another level.

Haas is a customer of Ferrari but there was to be no deference as Kevin ducked and dived to stay ahead while also discussing with race engineer Mark Slade whether it would be more prudent to allow Leclerc by and then ride his slipstream to get within range of Pierre Gasly and Lance Stroll. Ultimately Magnussen chose to fight.

Did this all take too much life out of Kevin's tyres, particularly after he swapped to the hards? Possibly – but, in the absence of retirements and incidents ahead, he was unlikely to do better than 10th.

"I was dreaming of a little more than one point today," he said. "But all the big teams finished the race and had no problems. So it was a difficult race to score points. There were no gifts as such."

## 5 McLaren faces "reality check"

While the upgrade package McLaren fitted to the MCL60 in Azerbaijan appeared to produce a performance uplift, the Miami track's

characteristics produced a stark reminder of the car's limitations. Lando Norris and Oscar Piastri were eliminated in Q1, started 16th and 19th, and finished 17th and 19th. The team was reduced to trying a long-shot strategy in which both drivers started on soft tyres – the only competitors to do so – in the hope of an early Safety Car period. But Miami would not even deliver this gift.

Norris's race wasn't helped by picking up floor damage when Nyck de Vries hit him at Turn 1. Piastri spent much of the race managing a brake-by-wire issue.

"The track doesn't suit us, longer corners don't suit us, the temperature doesn't suit us, the track surface doesn't suit us," concluded Norris.

"The main takeaway is that after a decent weekend in Baku from a performance point of view, we had a reality check," said team principal Andrea Stella. "The information we gained here helps us understand that some development directions still need to be pursued, like improving the car in off-brakes, off-throttle. At the moment, the car just doesn't work in this condition. At tracks like this, this becomes too much of a limitation."

Piastri started and finished in 19th as  
McLaren's Baku uplift faltered in Miami



# RESULTS ROUND 5

MIAMI INTERNATIONAL AUTODROME /  
07.05.23 / 57 LAPS



1st	Max Verstappen	Red Bull	1h27m38.241s
2nd	Sergio Pérez	Red Bull	+5.384s
3rd	Fernando Alonso	Aston Martin	+26.305s
4th	George Russell	Mercedes	+33.229s
5th	Carlos Sainz	Ferrari	+42.511s*
6th	Lewis Hamilton	Mercedes	+51.249s
7th	Charles Leclerc	Ferrari	+52.988s
8th	Pierre Gasly	Alpine	+55.670s
9th	Esteban Ocon	Alpine	+58.123s
10th	Kevin Magnussen	Haas	+62.945s
11th	Yuki Tsunoda	AlphaTauri	+64.309s
12th	Lance Stroll	Aston Martin	+64.574s
13th	Valtteri Bottas	Alfa Romeo	+71.637s
14th	Alex Albon	Williams	+72.861s
15th	Nico Hülkenberg	Haas	+74.950s
16th	Zhou Guanyu	Alfa Romeo	+78.440s
17th	Lando Norris	McLaren	+87.717s
18th	Nyck De Vries	AlphaTauri	+88.949s
19th	Oscar Piastri	McLaren	+1 lap
20th	Logan Sargeant	Williams	+1 lap

\*includes 5s penalty for speeding in the pitlane

### Retirements

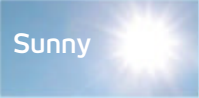
### Fastest lap

Max Verstappen 1m29.708s on lap 56

### TYRE COMPOUNDS USED



### CLIMATE



### AIR TEMP

30°C

### TRACK TEMP

43°C

### DRIVERS' STANDINGS

1 Verstappen	119pts	11 Hülkenberg	6pts
2 Pérez	105pts	12 Ocon	6pts
3 Alonso	75pts	13 Bottas	4pts
4 Hamilton	56pts	14 Piastri	4pts
5 Sainz	44pts	15 Guanyu	2pts
6 Russell	40pts	16 Tsunoda	2pts
7 Leclerc	34pts	17 Magnussen	1pt
8 Stroll	27pts	18 Albon	1pt
9 Norris	10pts	19 Sargeant	0pts
10 Gasly	4pts	20 De Vries	0pts







FINISHING STRAIGHT

## RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 6

## EMILIA ROMAGNA GP

19-21 May 2023

Autodromo Enzo e Dino Ferrari



PICTURE: ZAK MAUGER, ILLUSTRATION: ALAN ELDREDGE



## RACE DATA

## Circuit name

Autodromo Enzo e Dino Ferrari

First grand prix 1980

Number of laps 63

Circuit length 3.050 miles

Race distance 192.033 miles

Lap record 1m15.484s

Lewis Hamilton (2020)

F1 races held 30

Winners from pole 10

Pirelli compounds C3, C4, C5

## CAR PERFORMANCE

Downforce level Medium

Cooling requirement Medium

Full throttle 70%

Top speed 207mph

Average speed 129mph

## TIMETABLE (UK TIME)

Friday 19 May

Practice 1 12:30-13:30

Practice 2 16:00-17:00

Saturday 20 May

Practice 3 11:30-12:00

Practice 3 15:00-16:00

Sunday 21 May

Race 14.00

Live coverage Sky Sports F1

Highlights Channel 4

## THE MAIN EVENT

As Ben Edwards notes (p 22), 2023 is the 60th anniversary of the Autodromo Enzo e Dino Ferrari – then known as the Autodromo di Castellaccis – hosting its first Formula 1 race, a thinly supported non-championship event in which just 13 cars started. While Jim Clark won at a canter in his Lotus 25 (the famous chassis R5, wrecked by Trevor Taylor later that season but restored in the 1980s by Clark's mechanic Cedric Selzer), Ferrari was a no-show as new recruit John Surtees preferred to test the substantially reworked 156 chassis instead.

This year the venerable circuit will have an influence on F1's future since it has been selected as the trial for the new qualifying format in which drivers will have to use hard-compound tyres in Q1, mediums in Q2 and softs in Q3.

## 2022 RACE RECAP

This weekend was where Charles Leclerc's championship challenge began to go off the rails after a convincing win from pole in Australia. Leclerc qualified his Ferrari second to Max Verstappen's Red Bull here for the sprint race, seized the lead when Max made an indifferent start, but was then reeled in as the Red Bull proved gentler on its tyres.

Second in the sprint proved damaging for Charles on Sunday when rain ahead of the start made for slippery conditions on his side of the grid. Leclerc compounded a poor getaway by misjudging the kerbs at the Variante Alta and spinning into the barrier later on as he chased back. That left the way open for Max to lead a Red Bull 1-2 from team-mate Sergio Pérez, with McLaren's Lando Norris third.

**KEY CORNER: TURN 14/15** The Variante Alta is a depressingly fiddly chicane which is super-difficult to get right in ground-effect Formula 1 cars, particularly in the changeable conditions that tend to be a feature of recent races here.



## THE PAST FIVE WINNERS HERE...



2022

Max  
Verstappen  
Red Bull

2021

Max  
Verstappen  
Red Bull

2020

Lewis  
Hamilton  
Mercedes

2006

Michael  
Schumacher  
Ferrari

2005

Fernando  
Alonso  
Renault





FINISHING STRAIGHT

## RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 7

## MONACO GP

26-28 May 2023

Circuit de Monaco, Monte Carlo



PICTURE: ZAK MAUGER. ILLUSTRATION: ALAN ELDREDGE

## THE MAIN EVENT

A mainstay of the world championship calendar apart from a couple of years as a sportscar event in the early 1950s and a Covid-induced break more recently, Monaco has long been considered the jewel in F1's crown. But that position of privileged safety in the calendar has come into question in the post-Ecclestone era as F1's new commercial rights holder has played hardball with the principality over its new contract. Briefly in doubt, this has now been extended until 2025.

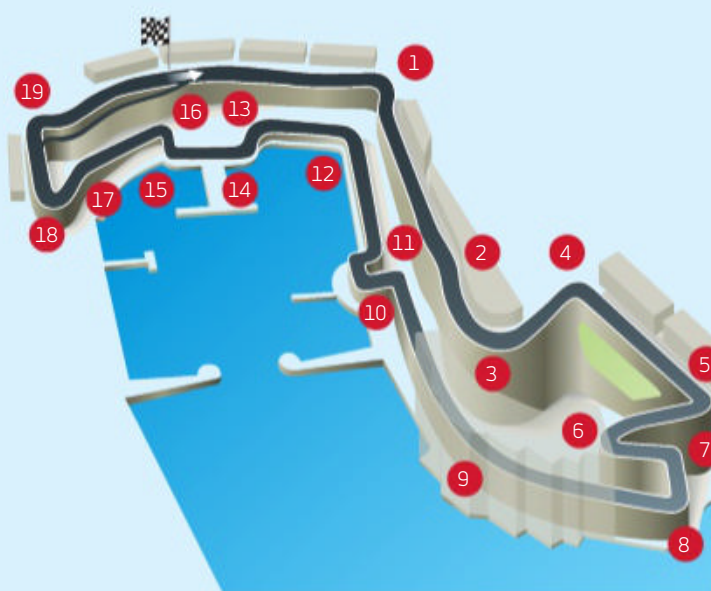
Ahead of the race this year many of the roads which make up the circuit are being resurfaced, including the start-finish straight and the tunnel under the Fairmont Hotel. Formula 3 is also appearing on the support bill for the first time since 2005.

## 2022 RACE RECAP

This proved to be a baffling race all round as heavy rain forced a rolling start, over an hour later than planned, since water had disrupted the electrics operating the lighting gantry. But the FIA's infrastructure woes were as nothing to the chaos which erupted at Ferrari as the track dried and the Scuderia's trackside group went into meltdown. Polesitter and race leader Charles Leclerc obeyed a call to come in for intermediate tyres two laps after both Red Bulls had done likewise – rather too late.

As slicks became the optimal choice, Ferrari summoned both drivers to the pits at once, causing Leclerc to be delayed behind team-mate Sainz. Sergio Pérez emerged the winner for Red Bull, followed by Sainz and Verstappen.

**KEY CORNER: TURN 15** As the cars perform their high-speed dance around the swimming pool complex it's so easy to turn in fractionally too early here. The result is almost inevitably a shunt which will bring out a Safety Car at best.



## THE PAST FIVE WINNERS HERE



2022  
Sergio  
Pérez  
Red Bull



2021  
Max  
Verstappen  
Red Bull



2019  
Lewis  
Hamilton  
Mercedes



2018  
Daniel  
Ricciardo  
Red Bull



2017  
Sebastian  
Vettel  
Ferrari



## RACE DATA

**Circuit** Circuit de Monaco**First GP** 1950**Number of laps** 78**Circuit length** 2.073 miles**Race distance** 161.734 miles**Lap record** 1m12.909s

Lewis Hamilton (2021)

**F1 races held** 68**Winners from pole** 30**Pirelli compounds** C3, C4, C5

## CAR PERFORMANCE

**Downforce level** High**Cooling requirement** High**Full throttle** 43%**Top speed** 181mph**Average speed** 98mph

## TIMETABLE (UK TIME)

**Friday** 26 May**Practice 1** 12:30-13:30**Practice 2** 16:00-17:00**Saturday** 27 May**Practice 3** 11:30-12:30**Qualifying** 15:00-16:00**Sunday** 28 May**Race** 14.00**Live coverage** Sky Sports F1**Highlights** Channel 4





FINISHING STRAIGHT

## RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 8

## SPANISH GP

2-4 June 2023

Circuit de Barcelona-Catalunya



PICTURE: MARK SUTTON. ILLUSTRATION: ALAN ELDREDGE

## THE MAIN EVENT

**Another race once considered** to be under threat, the Spanish Grand Prix concluded a five-year extension until 2026 at the end of the 2021 season, although calendar congestion has caused it to be shoehorned in a month later this year and at the end of a potentially gruelling triple-header also containing the Emilia Romagna and Monaco GPs. Given the unlovely environs – an anonymous industrial estate well north of Barcelona itself – Formula 1 folk will be eager to leave.

Teams used to complete so many testing miles here the races were generally processional. These circumstances have changed a little since pre-season testing has shifted to Bahrain. More significantly, this year the final sequence of corners has been restored and the loathed chicane deleted. Barcelona needs to impress, since F1's CEO has been seen meeting dignitaries in Madrid...

## 2022 RACE RECAP

Charles Leclerc started from pole position but was unable to profit from Max Verstappen spinning early in the race. Shortly before half distance Leclerc suffered an engine blow-up and retired. Ferrari team-mate Carlos Sainz wasn't in a position to spoil Red Bull's day, having made a poor start.

Verstappen suffered no long-term damage from his spin although he was plagued by DRS issues – but he had no difficulty passing team-mate Sergio Pérez, who was ordered to move over for him (much to Checo's post-race chagrin).

**KEY CORNER: TURN 14** Formerly known as Turn 16, this right-hand corner has thankfully been restored to its pre-2007 status as fast, demanding and more than a little hairy thanks to the removal of the chicane which preceded it.



## RACE DATA

**Circuit name** Circuit de Barcelona-Catalunya

**First grand prix** 1991

**Number of laps** 66

**Circuit length** 2.905 miles

**Race distance** 190.645 miles

**Lap record** 1m18.149s,  
Max Verstappen (2021)

**F1 races held** 32

**Winners from pole** 23

**Pirelli compounds** C1, C2, C3

## CAR PERFORMANCE

**Downforce level** High

**Cooling requirement** Medium

**Full throttle** 64.4%

**Top speed** 200mph

**Average speed** 119mph

## TIMETABLE (UK TIME)

**Friday** 2 June

**Practice 1** 12:30-13:030

**Practice 2** 16:00-17:00

**Saturday** 3 June

**Practice 3** 11:30-12:30

**Qualifying** 15:00-16:00

**Sunday** 4 June

**Race** 14.00

**Live coverage** Sky Sports F1

**Highlights** Channel 4

## THE PAST FIVE WINNERS HERE



2022  
Max  
Verstappen  
Red Bull



2021  
Lewis  
Hamilton  
Mercedes



2020  
Lewis  
Hamilton  
Mercedes



2019  
Lewis  
Hamilton  
Mercedes





2018  
Lewis  
Hamilton  
Mercedes



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FINISHING STRAIGHT

# RACE PREVIEW

F1 WORLD CHAMPIONSHIP ROUND 9

# CANADIAN GP

16-18 June 2023  
Circuit de Gilles Villeneuve



PICTURE: MARK SUTTON; ILLUSTRATION: ALAN ELDREDGE

## THE MAIN EVENT

**Formula 1 returns** to the heart of a city for a not-quite street race on a man-made island in the St Lawrence Seaway. The Île Notre-Dame was created for the 1967 World Expo, using 15 million tons of rock extracted during construction of Montréal's long-delayed metro system. In the mid-1970s the majority of the pavilions were demolished to make way for a rowing basin as the city hosted the Summer Olympics, while two were repurposed into the Montréal Casino which remains part of the background to this day.

The interior roads were reconfigured into a racetrack as F1 machinery outgrew Canada's two other GP venues, Mosport and Mont-Tremblant. But it took almost a quarter of a century to get the first corner complex right...

## 2022 RACE RECAP

Charles Leclerc had dropped well behind Max Verstappen by the time the Formula 1 circus reached Canada and there was further misery for Ferrari here as Leclerc's turbo failed during practice, incurring a 10-place grid penalty since the replacement took him over his annual allocation. Max qualified on pole with Fernando Alonso's Alpine a surprise companion on the front row after a rain-affected session.

A late-race Safety Car turned what was looking like a cruise to the flag into a more demanding race for Max as Carlos Sainz pitted for fresh tyres and chased him down. But there was no way past and Carlos finished a second in arrears.

**KEY CORNER: TURN 13/14** A chicane joining two fast sections of a track has all the makings of a flashpoint – especially with a concrete wall standing at the exit. Not for nothing is this known as the 'Wall of Champions', because it's caught out the best in the business.



## RACE DATA

**Circuit** Circuit de Gilles Villeneuve  
**First GP** 1978  
**Number of laps** 70  
**Circuit length** 2.709 miles  
**Race distance** 189.685 miles  
**Lap record** 1m13.078s  
Valtteri Bottas (2019)  
**F1 races held** 41  
**Winners from pole** 20  
**Pirelli compounds** TBA

## CAR PERFORMANCE

**Downforce level** Medium  
**Cooling requirement** Medium  
**Full throttle** 67%  
**Top speed** 217mph  
**Average speed** 132mph

## TIMETABLE (UK TIME)

**Friday** 16 June  
**Practice 1** 18:30-19:30  
**Practice 2** 22:00-23:00  
**Saturday** 17 June  
**Practice 3** 17:30-18:30  
**Qualifying** 21:00-22:00  
**Sunday** 18 June  
**Race** 19.00  
**Live coverage** Sky Sports F1  
**Highlights** Channel 4

## THE PAST FIVE WINNERS HERE

2022	2019	2018	2017	2016
Max Verstappen	Lewis Hamilton	Sebastian Vettel	Lewis Hamilton	Lewis Hamilton
Red Bull	Mercedes	Ferrari	Mercedes	Mercedes

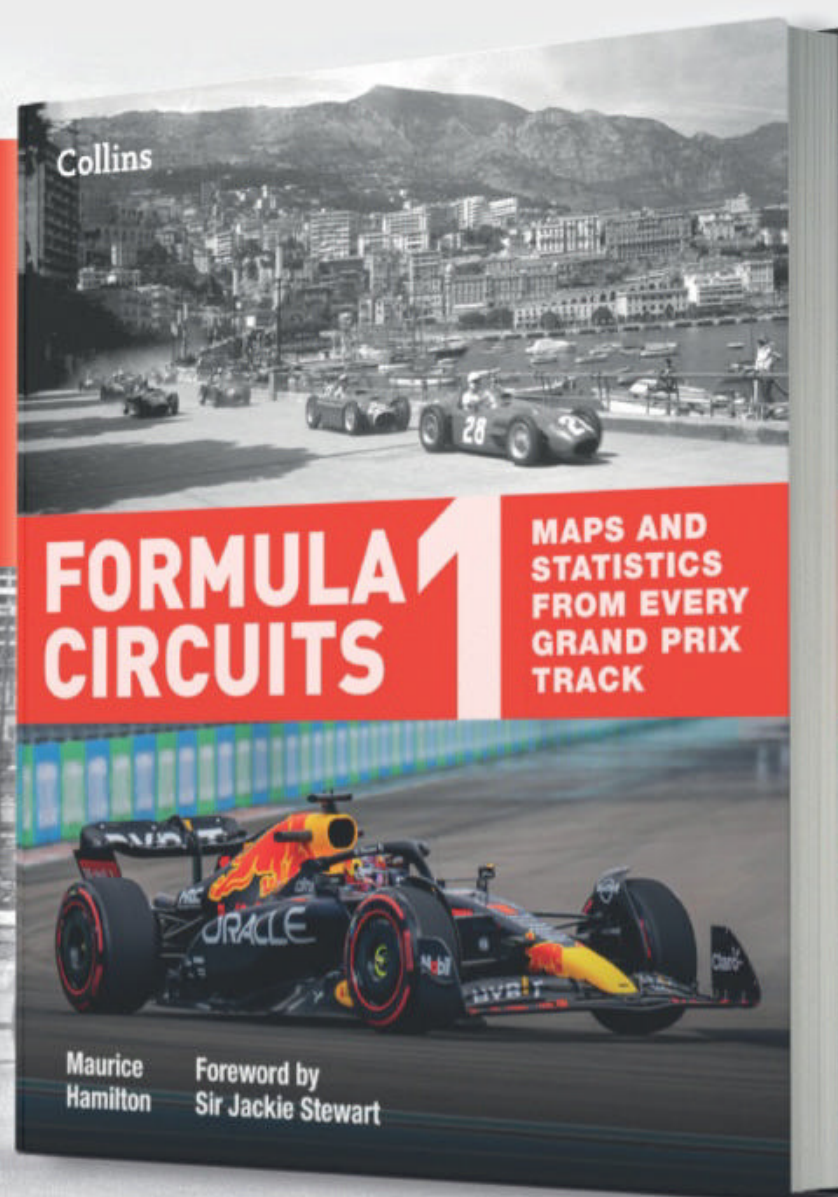


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# GEAR UP

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### FERRARI FROM INSIDE AND OUTSIDE

**Authors** Rainer Schlegelmilch, Ercole Colombo, James Allen

**Price** £60

**Gerhard Berger** once said of Ferrari's HQ in Maranello, "Stand outside it and you wonder why they don't win every race. Stand inside it and you wonder how they manage to win any!" The Scuderia has been a continuous presence in the tapestry of Formula 1 since 1950 and this new book offers a compelling multi-faceted view of the magical marque.

Maranello insiders including the late Mauro Forghieri, in one of his final interviews, and Enzo Ferrari's biographer Leo Turrini provide a

written perspective on life in and around Ferrari, an organisation still steeped in the mythology surrounding its enigmatic founder. Photographic powerhouses Rainer Schlegelmilch and Ercole Colombo combine for the first time in print to provide the imagery and underline the book's thematic concept: Schlegelmilch saw himself as a reportage photographer in the style of the Magnum collective while Colombo was the consummate insider with privileged access to Enzo himself.



### TIMEX MARLIN AUTOMATIC SUB-DIAL

**Price** £250

[timex.co.uk](https://timex.co.uk)

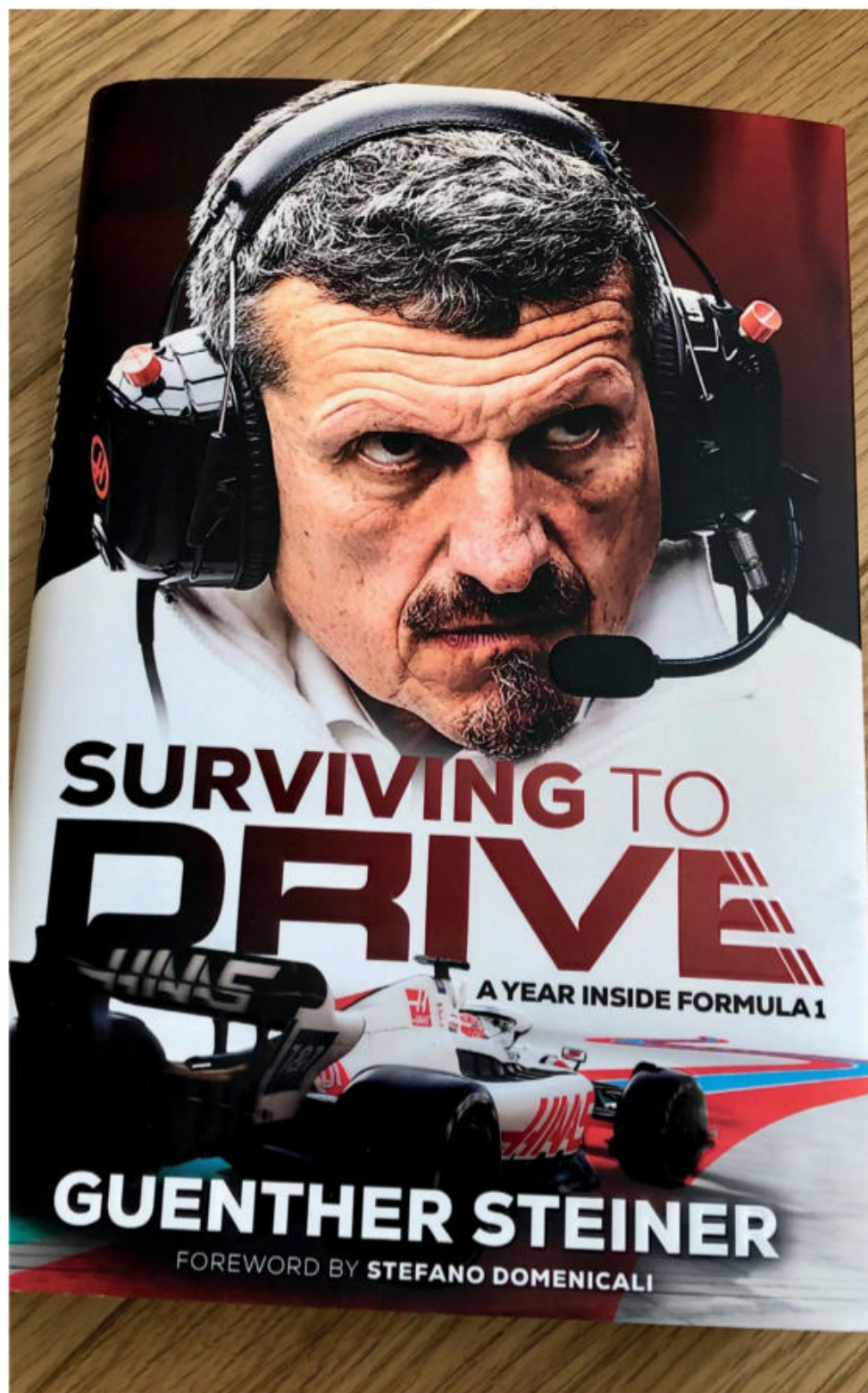


Sub-Dial is more casual, with bolder Arabic numerals and a four-handed movement incorporating, yes, a 24-hour sub-dial. The Mod movement is a clear inspiration behind the red and blue design details.

The 39mm case is crafted in stainless steel with a brushed finish to the top and sides and polished bevels. A stainless steel caseback featuring an engraving of a marlin offers a small circular display window with a view of the self-winding Miyota Caliber 8217 movement. The watch is waterproof to 50m and the two-piece leather strap is available in a choice of colours.







## SURVIVING TO DRIVE

Price £20

[penguin.co.uk](http://penguin.co.uk)

**Haas team principal** Guenther Steiner enjoys a proportion of the airtime on Netflix's *Drive to Survive* arguably far in excess of the results his team's recent form merits. That, of course, is because his unfiltered delivery makes for more compelling viewing than the cautious bromides offered by many of his peers. Hardly surprising, then, that a publisher should look to exploit the popularity of *DtS* by offering a book focused on one of the show's stars.

Ghostwriter James Hogg's

eclectic back catalogue includes autobiographies with the likes of Brian Blessed, Johnny Herbert, Gary Numan and Neil 'Razor' Ruddock. Steiner's stream of consciousness does the narrative heavy lifting here and the prose accurately captures his distinctive voice (still shooting from the hip, if perhaps less expletive laden than in real life). While the principal focus is on the 2022 Formula 1 season there are diversions into Steiner's multi-faceted working background.



## THRUSTMASTER T818 FERRARI SF1000

Price £999

[thrustmaster.com](http://thrustmaster.com)

**Announced at the** launch of Ferrari's 2023 Esports Series, the new flagship in Thrustmaster's racing line-up combines the company's highly acclaimed T818 direct-drive racing wheel base with an officially licenced Ferrari SF1000 wheel rim, rosso corsa metal plates and Scuderia Ferrari logos. The T818 comes packaged with a comprehensive mounting system which enables users to fit it to desks or tables as well as sim rigs.

Its direct-drive internals provide up to 10Nm of constant torque to facilitate a realistic force-feedback effect.

The wheel itself has a carbon fibre faceplate and provides up to 69 levels of information (depending on the simulator software) through a 109mm display screen. There are also 25 customisable buttons for the full F1 experience. The wheel is officially launched on 14 June but available for pre-order now.







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## A STEP TOO FAR WITH THE SPRINT FORMAT

In this lucrative Liberty Media-owned era for Formula 1, it's easier to foresee every round featuring a sprint race sooner than the format being scrapped altogether. Money talks, so a 57% boost to the TV audience curiously tuning in to watch a new qualifying shootout for the Azerbaijan Grand Prix versus 2022 means the revised schedule is here to stay. As such it's a more efficient use of energy to seek to optimise the latest restructure instead of futilely lamenting its very existence.

That begins with urging the FIA to close the silly loophole for the Saturday sprint qualifying that meant those who burned through their new tyre allocation come the end of Q2 could not then enter Q3. While the format alterations were only voted through at the 11th hour before heading to Baku, this was not a good look, leaving Pirelli hamstrung. Removing just one car from the top



**The first sprint race of 2023 came with the addition of a standalone qualifying shootout format to form the grid but this didn't help to spice up the action**

10 battle diminishes the very spectacle these timetable tweaks sought to enhance. Likewise, legislators must immediately write a clause to prevent those drivers with no new dry rubber from then setting a time on wets, as Lando Norris and Yuki Tsunoda might theoretically have done to gain a grid spot over the other. While ultimately neither attempted this trick, the fact they could

have is a clear oversight.

Next up, the parc fermé deadline needs to be relaxed. The definition of insanity dictates it was always unlikely that in consistently clement conditions the sprint and grand prix grids were never going to look dramatically different. While Williams isn't about to propel itself into the fight for pole, to increase the likelihood of variation – and now there's only one practice session during a sprint weekend – teams should be allowed to make setup tweaks on a Friday night to add some uncertainty to Saturday. Granted, it will slash the chances of the better-staffed leading teams slipping up as this quick-fire format originally intended. But F1 should remain an engineering competition. Easing parc fermé would help.

The bigger issue was a lack of drama in either race in Azerbaijan. While not every sprint contest since 2021 has been a thriller, they have often set the scene for the full GP. Think Lewis Hamilton and

Max Verstappen dicing at Silverstone to tee up the Copse shunt 24 hours later, or Charles Leclerc cooking his tyres one day in Austria to then tweak his strategy and mount no fewer than three passes for the lead on Verstappen the next. That was arguably the best duel of 2022. Baku, though, was dull throughout.

Taking 100 metres out of the DRS zone on the main straight contributed to the lack of lunges into Turn 1. But the Red Bulls still managed to dive past rivals. The sheer dominance of the RB19 and absence of overtaking from the rest of the field suggests another rules rethink might soon be required.

Now the hype over the switch to ground effects has cooled, it's clear the shakeup has underwhelmed. The competitive leap made by Aston Martin aside, there haven't been shock winners. Drivers also reckon following another car is noticeably harder again this season. And at the time of writing, after four rounds, there's yet to be a true thriller in 2023. Even if it means sacrificing a couple of different takes on how to design a sidepod, it increasingly looks as though the technical rules need to be even more prescriptive. This, over working out where an extra qualifying fits into the timetable, will do much more to boost Formula 1's entertainment and audience.





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